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SEARCH REQUEST FORM

Scientific and Technical Informati n Center Byzaminer # : 1 8 1 5 0 Requester's Full Name: Art Unit: 1642 Phone Number 30 8 4823 Serial Number: _ 09/38954 Mail Box and Bldg/Room Location: MI/8 TH Results Format Preferred (circle): PAPER DISK E-MAIL If more than one search is submitted, please prioritize searches in order of need. provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract. are Methods for the prevention alreatment ... Inventors (please provide full names): Earliest Priority Filing Date: *For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number. @ AMINO Acid Residues 22-194 in 566. 10#2

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SE ONLY	Type of Search	Vendors and cost where applicable
4.3.8.449q	AA Sequence (#)	Dialog
cation:	Structure (#)	Questel/Orbit
archer Picked Up:	Bibliographic	Dr.Link
Completed: 1/27/01	Litigation	Lexis/Nexis
cher Prep & Review Time:	Fulltext	Sequence Systems
Clerical Prep Time:	Patent Family	WWW/Internet
Online Time:	Other	Other (specify)

PTO-1590 (1-2000)

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Result
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Listing first 45 summaries
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Copyright (c) 1993 - 2000 Compugen Ltd.
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000300 homo sapien
095407 homo sapien
095407 homo sapien
095407 homo sapien
0962327 mus musculu
016042 homo sapien
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057112 variola vir
087111 variola vir
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ALIGNMENTS

888888	RA RA RT	R R R R R R R R R R R R	RP RC RA RA RA RA	RN OC OS	RESULT 008712 ID 00 AC 0 DT 0 DT 0 DT 0 DT 0
-I- FUNCTION: MAY REGULATE BONE RESORPTION BY BLOCKING TERMINAL STAGES OF OSTEOCLAST DIFFERENTIATION AND ALLOWING ACCUMULATION OF STATE BONE AND CARTILAGE. MAY INHIBIT IN VITRO SYMPHESIZED BONE AND CARTILAGE. MAY INHIBIT IN VITRO OSTEOCLASTOGENESIS BY INTERUPTING CELL-TO-CELL SIGNALING BLOWNER. STROMAL CELLS AND OSTEOCLAST PROCENTIONSI- SUBJUNT: HONDOINER (MAJOR FORM) AND MONDURE (MINOR FORM)	Mizuno A., Murakani A., Nakagawa N., Yasuda H., Tsuda E., Morii il P., Higashio K.; "Structure of the mouse osteoclastogenesis inhibitory factor (' gene and its expression in embryogenesis."; Gene 215:339-343(1998)	Tosteoprotegerin; a novel secreted protein involved in the regui.tion of bone density "; Cell 89:309-319(1997). [2] [2] SEQUENCE FROM N.A. STRAIN-129/CDA, AND NIH SWISS; MEDLINE-98382527: PubMed-9714833.	SEQUENCE FROM N.A. STRAIN-BALB/C; TISSUE-KIDNEY; MEDLINE-9768(2011) PubMed=9108485; MEDLINE-9768(2011) PubMed=9108485; Simonet W.S., Lacey D.L., Dunstan C.R., Kelley M., Chang MS., Luethy R., Nguyen H.Q., Wooden S., Bennett I., Boone T., Shiman., G., Derose M., Elliott R., Colombero A., Tan HL., Trail G., Sull'son J., Davy E., Bucay N., Renshaw-Gegg L., Hughes T.M., Hill D., Patt., W., Campbell P., Sander S., Van G., Tarpley J., Derby P., Lee R.,	(OCIF). (OCIF). (OCIF). TNPRSF11B OR OPG. TNUS MUSCUlus (Mouse). Mus musculus (Mouse). Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi, Mammaila; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; M. O. NCBI_TaxID=10090; [1]	ULT 1 (712 PRELIMINARY; PRT; 401 AA. 008712; 070202; 0708712; 070202; 0709712; 070202; 0709712; 070202; 0709712; 070202; 0709712; 070202; 0709712; 070202; 070

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Best Local Similarity
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HSSP; P25942; 1CD
MGD; MGI:109587;
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Glycoprotein;
SIGNAL
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PROSITE; PS00652; TNFR_NGFR_1; |
PROSITE; PS50017; DEATH_DOMAIN;
PROSITE; PS50050; TNFR_NGFR_2;
PRODOM; PD000771; -; 1.
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TISSUE SPECIFICITY: EXPRESSED AT HIGH LEVELS IN LIVER, LUNG, BRAIN, HEART, KIDNEY, STOMACH, INTESTINE, SKIN, CALVARIA AND PLACENTA. NOT DETECTED IN SPLEEN.

DEVELOPMENTAL STAGE: IN THE EMBRYO, HIGH LEVELS ARE DETECTED DEVELOPMENTAL STAGE: IN THE EMBRYO, HIGH LEVELS ARE DETECTED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEVELOPMENTAL STAGE: IN THE EMBRYO, HIGDAY 7. AT DAY 11, EXPRESSION DECREASES 15 TO DAY 17.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7 994331; AAB53708.1;
AB013898; BAA28259.1;
AB013903; BAA33388.1;
AB013899; BAA33388.1;
AB013900; BAA33388.1;
AB013900; BAA33388.1;
AB013901; BAA33388.1;
AB013902; BAA33388.1;
         CKKCPDGFFSGETSSKAPCIKHTNCSTFGLLLIQKGNATHDNVCSGNREATQK 173
                                            YCSPVCKELQSVKQECNRTHNRVCECEEGRYLEIEFCLKHRSCPPGSGVVQAGTPERNTV
                                                                      CKKCPDGFFSGETSSKAPCIKHTNCSTFGLLLIQKGNATHDNVCSGNREATQK
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TNFR-CYS
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Matches Query Match Best Local

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Conservative

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Pred. No. 3.4e 5; Mismatches

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Indels

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Similarity

94.3%;

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RESULT TO RESULT
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"Osteoprotegerin: a novel secreted protein involved in the regulation of bone density.";
Cell 89:309-319(1997).
                                                                                                        CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                         CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -i SUBCELLULAR LOCATION: EXTRACELLULAR.
-i SIMILARITY: CONTAINS A LA NGER/THER-TYPE
EMBL; U9430; AAB55707.1; -.
HSSP; P25942; 1CDF.
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Mammalia; Eutheria;
                                                                                    SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=97262071; PubMed=9108485;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INTERPRO; IPR001368;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FUNCTION: MAY REGULATE BONE RESORPTION BY BLOCKING TERMIN OF OSTEOCLAST DIFFERENTIATION AND ALLOWING ACCUMULATION C SYNTHESIZED BONE AND CARTILLAGE. MAY INHIBIT IN VITRO OSTEOCLASTOGENESIS BY INTERUPTING CELL-TO-CELL SIGNALING STROMAL CELLS AND OSTEOCLAST PROGENITORS.
SUBUNIT: HOMODIMER (MAJOR FORM) AND MONOMER (MINOR FORM) SIMILARITY).
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Rodentia;
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RESULTANCE 
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Best Local
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                                                                                                                                                                                  O00300; 060236;
00-JUL-1997 (TrEMBLrel. 04, Created)
01-JUL-1997 (TrEMBLrel. 04, Last sequence update)
01-JUL-1997 (TrEMBLrel. 15, Last annotation update)
01-CCT-2000 (TrEMBLrel. 15, Last annotation update)
05TEOPROTEGERIN PRECURSOR (OSTEOCLASTOGENESIS INHIBITORY FACTOR)
OSTEOPROTEGERIN PRECURSOR (OSTEOCLASTOGENESIS INHIBITORY FACTOR)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            He Z.-Y., "Cloning a
                                                                                               Eukaryota; Metazoa;
Mammalia; Eutheria;
                     SEQUENCE FROM N.A
                                                                                                                                                                               TNFRSF11B OR OPG OR OCIF.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
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01-OCT-2000
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01-MAY-2000
                                                                          NCBI_TaxID=9606;
                                                                                                                                                     Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PROSITE;
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oning and Expression of Osteo
ong Wu Hua Hsueh Yu Sheng Wu W
L; AF1341B7; AAF20168.1; --
P; P25942; 1CDF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CKRCPDGFFSNETSSKAPCRKHTNCSVFGLLLTQKGNATHDNICSGNSESTQK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CKKCPDGFFSGETSSKAPCIKHTNCSTFGLLLIQKGNATHDNVCSGNREATQK
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sapiens (Human)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          YCSPVCKELQYVKQECNRTHNRVCECKEGRYLEIEFCLKHRSCPPGFGVVQAGTPERNTV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ETFPPKYLHYDEETSHQLLCDKCPPGTYLKQHCTAKWKTVCAPCPDHYYTDSWHTSDECL
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TE; PS00652; TNFR_NGFR_1;
TE; PS50050; TNFR_NGFR_2;
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O (TrEMBLrel. 13,
O (TrEMBLrel. 15,
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                                                                                                                                                                                                                                                                                                                                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
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                                                                                               Chordata;
Primates;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Chordata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         89.3%;
87.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Zhang W.-J., Wu X.-F.;
on of Osteoprotegerin from Homo sapiens.";
Sheng Wu Wu Li Hsueh Pao 31:680-684(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7;
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Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 887; DB 4;
Pred. No. 4.3e-85;
7; Mismatches 15
                                                                                               Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               UNKNOWN_1.
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                                                                                                                                                                                                                                                                                                                                                               401
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                                                                                                                                                                                                                                                                                                                                                             AΑ
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PRESENTATION OF THE PRESEN
                                                          REPEAT
REPEAT
DOMAIN
DISULFID
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PROSITE;
                                                                                                                                                                                                                                                                                                 REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                      Glycoprotein;
SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       THE PANCREAS OR PERIPHERAL BLOOD LYMPHOCYTES.
-:- SIMILARITY: CONTAINS A LA-NGFR/TNFR-TYPE CYST
EMBL; AB002146; BAA25910.1; -.
EMBL; AB00282; BAA32076.1; -.
EMBL; AB00882; BAA32076.1; -.
EMBL; AB008821; BAA32076.1; JOINED.
EMBL; UP4032; ABA3799.1; -.
EMBL; UP4032; ABA3799.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "Identity of ostéoclastogenesis inhibitory factor (OCIF) osteoprotegerin (OPG): a mechanism by which OPG/OCIF inhiosteoclastogenesis in vitro."; Endocrinology 139:1329-1337(1998).
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[2]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "Osteoprotegerin: a no of bone density."; Cell 89:309-319(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Simonet W.S., Lacey D.L., Dunstan C.R., Kelley M., Chang N.S., Luethy R., Nguyen H.O., Wooden S., Bennett L., Boone T., Shinamelo Derose M., Elliott R., Colombero A., Tan H.-L., Trail G., Sulliand Davy E., Bucay N., Renshaw-Gegg L., Hughes T.M., Hill D., Pattisun Campbell P., Sander S., Van G., Tarpley J., Derby P., Lee R.,
                    CARBOHYL
                                        CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                    CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Morinaga T., Nakagawa N., Yasuda H., Tsuda E., Higashio I "Cloning and characterization of the gene encoding human osteoprotegerin/osteoclastogenesis-inhibitory factor."; Eur. J. Biochem. 254:685-691(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Yasuda H., Shima N., Nakagawa N., Mochizuki S.-I.,
Sato Y., Goto M., Yamaguchi K., Kuriyama M., Kanno
Tsuda E., Morinaga T., Higashio K.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TISSUE=LUNG FIBROBLAST;
MEDLINE=98151033; PubMe
                                                                                                                                                                                                                                                                                                                                             DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PFAM; PF00020; TNFR_c6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                   PRODOM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=98351569; PubMed=9688283;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INTERPRO;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FUNCTION: MAY REGULATE BONE RESORPTION BY BLOCKING TERMINAL OF OSTEOCLAST DIFFERENTIATION AND ALLOWING ACCUMULATION OF N SYNTHESIZED BONE AND CARTILAGE. MAY INHIBIT IN VITRO OSTEOCLASTOGENESIS BY INTERUPTING CELL-TO-CELL SIGNALING BET STROMAL CELLS AND OSTEOCLAST PROGENITORS.
SUBUNIT: HOMODIMER (MAJOR FORM) AND MONOMER (MINOR FORM) (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SUBCELLULAR LOCATION: EXTRACELLULAR.
TISSUE SPECIFICITY: EXPRESSED AT HIGHEST LEVELS IN
KIDNEY, PLACENTA, THYROID, SPINAL CORD AND LIVER. I
A NUMBER OF OTHER HEMATOPOIETIC AND IMMUNE ORGANS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       602643;
                                                                                                                                                                                                                                                                                                                                                                                                                                   PD000771;
                                                                                                                                                                                                                                                                                                                                                                                                                                                PS00652; TNFR_NGFR_1; PS50050; TNFR_NGFR_2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IPR001368; -
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                                                                                                                                                                                                                                                                                                                                                                                                            Cytokine;
                                                        BY SIMILARITY BY SIMILARITY
                                                                                                                                                                                                                                                                                                 TNFR-CYS
                                                                                                                                                                                                                                      DEATH DOMAIN
                                                                                                                                                                                                                                                          TNFR-CYS 4
                                                                                                                                                                                                                                                                               TNFR-CYS
                                                                                                                                                                                                                                                                                                                                             4 X TNFR-CYS.
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                    POTENTIAL
                                        POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    UNKNOWN_1
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T., Murakami A.,
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CONFLICT
SEQUENCE
                                                                                                                                                                                                                                    Dowd P., Huang A., Donahue C.J., Sherwood S.W., Baldwin Godowski P.J., Wood W.I., Gurney A.L., Hillan K.J., Cohe Goddard A.D., Botstein D., Ashkenazi A.; "Genomic amplification of a decoy receptor for Fas livescolon cancer.";
                                                                                                         Proc.
EMBL;
                                                          EMBL;
                                                                                  EMBL;
                                                                                                                                          Bai C., Connolly B., Metzker M.L., Hilliard C.A., Liu X., Sandig V., Soderman A., Galloway S.M., Liu Q., Austin C.P., Caskey C.T.; "Overexpression of M68/DcR3 in human gastrointestinal tract tumors independent of gene amplification and its location in a four-gene
                                                                                                                                                                                                                                                                                                TISSUE-BLOOD
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
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01-MAY-1999 (TrEMBLrel. 10, Last sequi
01-CCT-2000 (TrEMBLrel. 15, Last anno
DECOY RECEPTOR 3 (M68) (M68C) (M68E).
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INTERPRO; IPR000561; -.
INTERPRO; IPR001368; -.
PRAM; PF00020; TNFR_c6; 4.
PROSITE; PS00652; TNFR_NGFR_1;
                                                                                                                                                                                                      TISSUE=PANCREAS;
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Pitti R.M., Marsters S.A., Lawren
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                                                                                                                                                                                          MEDLINE=20122600; PubMed=10655513;
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                                                                                                                                                                                                                                                                                                                                     Nature 396:699-703(1998).
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                                              Natl Acad Sci U.S.A. 97:1230-1235(2000)
AF104419; AAD03056.1; -
AF134240; AAD0368.1; -
AF217796; AAF35244.1; -
AF217793; AAF35685.1; -
AF217794; AAF33686.1; -
AF217794; AAF33686.1; -
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263
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263
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87.3%;
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Last annotation
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Pred. No. 4.6e-85;
7; Mismatches 15;
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  UNKNOWN_1.
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EB42FA51C9D7C71E CRC64;
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Best Local 9
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SEQUENCE
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SEQUENCE
                                                                                                                                                                                                                                                                                                                 Bobe J., Goetz F.W.;
"A tumor necrosis factor receptor homolog is up-regulated in the brook trout (Salvelinus fontinalis) ovary at the completion of ovulation."; Biol. Reprod. 0:0-0(1999).
                                                                                                                                                                                                                                                                                                                                                                                                  Salvelinus fontinalis (Brook trout).
Eukaryota; Metazoa; Chordata; Craniata; Vertebra
Actinopterygii; Neopterygii; Teleostei; Euteleos
Protacanthopterygii; Salmoniformes; Salmonidae;
                                                                                                                                                                                                                                   PROSITE;
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PROSITE; PS50050; TNFR_NGFR_2; 2.
PRODOM; PD000771; -; 1.
                                                                                                                                                                                                                                                        HSSP; P19438; IEXT.
INTERPRO; IPR000561; -.
INTERPRO; IPR001368; -.
PFAM; PF00020; INFR_C6; 4.
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                                                                                                                                                                                                                                                                                                         EMBL;
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146
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                     FSGETSSKAPCIKHTNCSTFGLLLIQKGNATHDNVCS
                                             VVKQECSPSNNCECECKEGYYFNKKYEACIKHKECPPGYGANTTGTPHQDTECVQCQAGE
                                                         SVKQECNRTHNRVCECEEGRYL--EIEFCLKHRSCPPGSGVVQAGTPERNTVCKKCPDGF 128
                                                                                           DRYSGLSIVCDRCPPGTYLRAPCSAMRKSDCAECPNGAYTEFWNHISKCLRCS-MCAENQ
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AF156738; AAD56428.1;
                                                                                                                                        l Similarity
67; Conser
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                                                                                                                                                                                                                       PS00652; TNFR_NGFR_1; UNKN
PS01186; EGF_2; UNKNOWN_1.
PS50050; TNFR_NGFR_2; 1.
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42.9%;
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                                                                                                                                       Score 390.5; DB 13; Pred. No. 3.3e-33; Pred. No. 5.3e-33;
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Pred. No. 2.7e-36;
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                                                                                                                                                                                                                                               UNKNOWN_1
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annotation update)
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Euteleostei;
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182
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Best Local Similarity
Matches 62; Conserv
"Two human TNF receptors have similar intracellular, domain sequences."; Cytokine 2:231-237(1990).
EMBL; S63368; AAB19824.1; -.
HSSP; P25942; 1CDF.
                                                                                                                                                                                                                                                                            01-NOV-1996 (TrEMBLrel. 01, Created)
01-JAN-1999 (TrEMBLrel. 09, Last sequence update)
01-CCT-2000 (TrEMBLrel. 15, Last annotation update)
TUMOR NECROSIS FACTOR RECEPTOR.
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01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-MAY-2000 (TrEMBLrel. 13, Last annotation update)
TUMOR NECROSIS FACTOR RECEPTOR 2 MRNA (FRAGMENT).
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Q62327;
                                                                                                Dembic Z., Lo
Brockhaus M.,
                                                                                                                                                                                                                        Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=95178848; PubMed=7873884; Powell E.E., Wicker L.S., Peterso
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                                                                                                                                        MEDLINE-91370690;
                                                                                                                                                                                                     NCBI_TaxID=9606;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mamm. Genome 5:726-727(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene."
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YKPEPGYECQISQEYYDRKAQMCCAKCPPGQYVKHFCNKTSDTVCADCEASMYTQVWNQF 76
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                                                                                                  Loetscher H., G
M., Lesslauer W.
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                                                                                                                     PubMed=1966549;
her H., Gubler U.,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TNFR_NGFR_1;
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type 2 tumor
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Pred. No. 1.4e-23;
7; Mismatches 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SHESH
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Sciurognathi; Muridae.
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                                                                                                                                                                                                                          Hominidae;
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factor receptor
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                                                                                                                     H.W.,
                                                                                                                                                                                                                                           Euteleostomi;
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                                                                               distinct
                                                                                                                     Gentz
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Best Local Similarity
                                                                                                                               Matches
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Best Local
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                                                                                                                                                                                                                                                      EMBL; Y14619; CAA74969.1; J
EMBL; Y14620; CAA74969.1; J
EMBL; Y14621; CAA74969.1; J
EMBL; Y14622; CAA74969.1; J
EMBL; Y14623; CAA74969.1; J
EMBL; Y14679; CAA74969.1; J
EMBL; Y14679; CAA74969.1; J
HSSP; P19438; INCF.
                                                                                                                                                                                                                                                                                                                                                 Characterization of
                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                          Mus musculus (Mouse).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-NOV-1998 (TrEMBLrel.
01-NOV-1998 (TrEMBLrel.
01-OCT-2000 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    088734;
01-NOV-1998
                                                                                                                                                                                                PROSITE; PS00652; PROSITE; PS50050; PRODOM; PD000771;
                                                                                                                                                                                                                                  PFAM; PF00020; TNFR_c6; 4
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                                                                                                                                                                                                                                                                                                                                                                         Hurle
                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM
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                                                                                                                                                                                                                                                                                                                                                              "The Mouse Tumor Necrosis
             103
                                                                                                                                                                                                                                              NTERPRO;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     112 AGTPERNTVCKKCPDGFFSGETSSKAPCIKHTNCSTFGLLLIQKGNATHDNVCS
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CPPGSGVVQAGTPERNTVCKKCPDGFFSGETSSKAPCIKHTNCSTFGLLLIQKGNATH V 162
                           TQVWNQFRTCLSCSSSCSTDQVETRACTKQQNRVCACEAGRYCALKTHSGSCRQCMRI::k 151
                                                TDSWHTSDECVYCSPVCKELQSVKQECNRTHNRVCECEEGRYLEIEF-----
                                                                                YKPEPGYECQISQEYYDRKAQMCCAKCPPGQYVKHFCNKTSDTVCADSDTVCADCEASMY
                                                                                                        YDPETGH-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            YAPEPGSTCRLREYYDQTAQMCCSKCSPGQHAKVFCTKTSDTVCDSCEDSTYTQLWNWV! 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YDPETGH - - -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PGTETSDVVCKPCAPGTFSNTTSSTDICRPHQICNVVAI----PGNASMDAVCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ECVYCSPVCKELQSVKQECNRTHNRVCECEEGRYLEI - - - - - EFCLKHRSCPPGSGVVQ 1.11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ECLSCGSRCSSDQVETQACTREQNRICTCRPGWYCALSKQEGCRLCAPLRKCRPGFGVAH 1/9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         l Similarity
62; Conser
                                                                                                                                                                                                                                            IPR001368;
                                                                                                                                                                                                                                                                                                                                                                        Segade F.,
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                                                                                                                               Conservative
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TNFR_NGFR_2;
                                                                                                                                                                                                                                                                                                                                                                                                                     Chordata;
Rodentia;
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                                                                                                                                                                                       51106 MW;
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35.6%;
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                                                                                               -QLLCDKCAPGTYLKQHCT-----VRRKTLCVPCPDDSY
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JOINED.
JOINED.
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                                                                                                                          Score 287.5; I
Pred. No. 3.1e
17; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Last sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Created)
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Pred. No. 2.2e-23;
5; Mismatches 75
                                                                                                                                                                                                                                                                                                                                                                                                                    Craniata; Vertebrata;
Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT;
                                                                                                                                                                                     F6C15046B48FF83C CRC64;
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les 73;
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                                                                                                                                                    DB 11;
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Best Local
Matches 5
01-NOV-1999 (TrembLrel. 12, Created)
01-NOV-1999 (TrembLrel. 12, Last sequence update)
01-OCT-2000 (TrembLrel. 15, Last annotation update)
RECEPTOR ACTIVATOR OF NF-KAPPA-B PRECURSOR (TNF-RELATED ACTIVATION-INDUCED CYTOKINE RECEPTOR) (RANK).
                                                                                                                               Q9Y6Q6;
                                                                                                                                                      9986Q6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      INTERPRO; IPR001368; -.
PFAM; PF00020; TNEF_C6; 4.
PFAM; PF00531; death; 1.
PROSITE; PS00652; TNEF_NGER_1; UNKNOWN_1.
PROSITE; PS50017; DEATH_DOMAIN; 1.
PROSITE; PS50050; TNEF_NGER_2; 1.
PRODOM; PD000771; -; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.

Pan G., Bauer J.H., Haridas V., Wang S., Liu D., Vincenz C., Aggarwal B.B., Dixit V.M.;

Vincenz C., Aggarwal B.B., Dixit V.M.;

"Identification and functional characterization domain-containing TNF receptor.";

Submitted (MAY-1998) to the EMBL/GenBank/DDBJ days and the Containing TNF receptor.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-NOV-1998 (TrEMBLrel 08, 01-NOV-1998 (TrEMBLrel 08, 01-OCT-2000 (TrEMBLrel 15,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HSSP;
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DR6 OR DJ181J13.1
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                                                                                                                                                                                                                                                                                                                                                                                                                          KELQSVKQECNRTHNRVCECEEGRYLEIEFCLKHRSCPPGSGVVQAGTPERNTVCKKCPD 126
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57; Conserv
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                                                                                                                                                      PRELIMINARY;
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Lrel. 15, Last annotation update)
RECEPTOR-6 (DJ181J13.1) (DR6 (TNFR-RELATED DEATH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          71844
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36.1%;
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Pred. No. 4
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PROSITE; PS00652; TNFR_NGFR_1;
PROSITE; PS50050; TNFR_NGFR_2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            and dendritic-cell function. Nature 390:175-179(1997).
                                                                                                                                                                                                                                                                                                                              SEQUENCE
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HSSP; P25942; 1CDF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Galibert L.;
"A homologue of the TNF receptor and its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=9606;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
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                                                                                                                                                                                           20 CDKCAPGTYLKQHCTVRRKTLCVPCPDHSYTDSWHTSDECVYCSPVC---KELQSVKQEC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SIMILARITY: CONTAINS A LA-NGFR/TNFR-TYPE CYSTEINE-RICH REGION. L; AF018253; AAB86809.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SUBCELLULAR LOCATION: TYPE I MEMBRANE PROTEIN (POTENTIAL). TISSUE SPECIFICITY: UBIQUITOUS EXPRESSION WITH HIGH LEVELS SKELETAL MUSCLE, THYMUS, LIVER, COLON, SMALL INTESTINE AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FUNCTION: RECEPTOR FOR A CYTOKINE LIGAND KNOWN AS RANKL
                           SKAPCIKHTNCSTFGLLLIQKGNATHDNVCSGNREA 170
                                                                                                                                                     CNKCEPGKYMSSKCTTTSDSVCLPCGPDEYLDSWNEEDKCL-LHKVCDTGKALVAVVA: 104
STDKCRPWTNCTFLGKRVEHHGTEKSDAVCSSSLPA
                                                                           NSTTPRRCACTAGYHWSQDCECCRRNTECAPGLGAQHPLQLNKDTVCKPCLAGYFSDAFS
                                                                                                     NRTHNRVCECEEGRY--LEIEFCLKHRSCPPGSGVVQAGTPERNTVCKKCPDGFFSGETS 134
                                                                                                                                                                                                                                                   Similarity
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19; Mismatches
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TNFR-CYS 2.
TNFR-CYS 3.
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                                                                                                                                                                                                                                                                     DB 4;
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and dendritic-cell function.";
Nature 390:175-179(1997).
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REPEAT
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O1-JAN-1998 (TrEMBLrel. 05, Created)
O1-JAN-1998 (TrEMBLrel. 05, Last sequence update)
O1-OCT-2000 (TrEMBLrel. 15, Last annotation update)
RECEPTOR ACTIVATOR OF NF-KAPPA-B PRECURSOR (TNF-RELATED
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-i- SUBCELLULAR LOCATION: TYPE I MEMBRANE PROTEIN (POTENTIAL)
-i- SIMILARITY: CONTAINS A LA-NGFR/TNFR-TYPE CYSTEINE-RICH RE
EMBL, AF019046; AAB86810.1; -.
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PROSITE; PS50050; TNFR_NGFR_2; 1.
PRODOM; PD000771; -; 1.
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Anderson D.M., Maraskovsky E., Billin
Tometsko M.E., Roux E.R., Teepe M.C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TISSUE-LIVER
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Mammalia; Eutheria;
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TNFRSF11A OR RANK.
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TPERNTVCKKCPDGFFSGETSSKAPCIKHTNCSTFGLLLIQKGNATHDNVCSGN 167
                                                     CL-LHKVCDAGKALVAV-DPGNHTAPRRCACTAGYHWNSDCECCRRNTECAPGFGAQHPL
                                                                                                       CVYCSPVC---KELQSVKQECNRTHNRVCECEEGRY--LEIEFCLKHRSCPPGSGVVQAG
                                                                                                                                                               QVTPPCTQERHYE-HLGR--CCSRCEPGKYLSSKCTPTSDSVCLPCGPDEYLDTWNEEDK
                                                                                                                                                                                                                                                                                                   Similarity
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Rodentia;
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33.9%;
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BY SIMILARITY.

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Pred.
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4 X TNFR-CYS.
TNFR-CYS 1.
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Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      UNKNOWN_1.
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e M.C., DuBose
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                                                                                                                                                                                                                                                                       82;
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Best Local
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057112;
01-JUN-1998
01-JUN-1998
01-OCT-2000
                   Nature
[2]
                              Massung R.F., Esposito J.J., Liu I
Knight J.C., Aubin L., Yuran T.E.,
"Potential virulence determinants
smallpox virus genome.";
Nature 366:748-751(1993).
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G2R OR CRMB.
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01-NOV-1996
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                                                                                                                                                              SEQUENCE FROM N.A.
STRAIN-BANGLADESH-1975;
                                                                                                                                                                                                                                                                                                                                                                                                              Q85407;
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PROSITE; PS00052; TNFR_NGFR_1;
PROSITE; PS50050; TNFR_NGFR_2;
PRODOM; PD000771: -; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
STRAIN='WHITEPOX' CHIMP
                                                                                                                                           MEDLINE=94088747; PubMed=8264798;
                                                                                                                                                                                                                                                  Orthopoxvirus
                                                                                                                                                                                                                                                                   Viruses; dsDNA viruses,
                                                                                                                                                                                                                                                                                                                                                  01-OCT-2000
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8 (TrEMBLrel. 06, Last
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OSIS FACTOR RECEPTOR 1
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Esposito J.J., Liu L.I.,

Esposito J.J., Liu L.I.,

Finants In t
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.M., Esposito J.J.;
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Last annotation update)
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Pred. No. 2.
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                                                                                                                     L.I.,
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                                                                             Utterback T.R.,
M., Loparev V.N.;
regions of variola
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Best Local S
Matches 48
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Best Local Similarity
Matches 48; Conserv
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STRAIN-MAJOR, CONGO-1970 (CNG-70);

STRAIN-MAJOR, CONGO-1970 (CNG-70);

A Loparev V.N., Parsons J.M., Esposito J.J.;

A Loparev V.N., Parsons J.M., Esposito J.J.;

L Submitted (FEB-1997) to the EMBL/GenBank/DDBJ databases.

EMBL; U88147; AAB94372.1; -.

HSSP; p25942; 1CDE.

R HSSP; p25942; 1CDE.

R HSSP; p25942; 1CDE.

R HSSP; p25942; 1CDE.

R HSSP; p25942; 1CDE.

PROSITE; PS00052; TNFR_C6; 2.

PROSITE; PS00055; TNFR_NGFR_1; 2.

PROSITE; PS00055; TNFR_NGFR_2; 2.

PROSITE; PS00050; TNFR_NGFR_2; 2.

R PRODOM; PD000771; -; 1.

SEQUENCE 349 AA; 38273 MW; 2987FF000CD4824F5 CRC64;
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Loparev V.N., Parsons J.M., Esposito J.J.;
Lobarev V.N., Parsons J.M., Esposito J. Chembank/DDBJ databases.
REMBL; L22579; AAA6933.1; -.
REMBL; U88152; AAA94377.1; -.
REMBL; U88152; AAB94377.1; -.
REM
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01-JUN-1998 (TIEMBLIEL 06, Last sequence update)
01-OCT-2000 (TIEMBLIEL 15, Last annotation update)
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057110;
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Viruses; dsDNA viruses,
Orthopoxvirus.
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143 SVGDVICSPCGFGTYSHTVSSADKCEPVPN-NTFNYIDVE 181
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                                                                                                                         YCSPYCKELQSYKQECNRTHNRYCECEEGRYLEI-----EFCLKHRSCPPGSGYYQAGT 114
                                                                               YTPPNGKCKDTEYKRHNLCCLSCPPGTYASRLCDSKTNTQCTPCGSGTFTSRNNHLPACL
                                                                                                                                                                                                                                                     YDPETG-----HQLLCDKCAPGTYLKQHCTVRRKTLCVPCPDHSYTDSWHTSDECV 60
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                                                                                                                                                                                                                                                                                                                      Conservative
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                                                                                                                                                                                                                                                                                                                Score 209.5; DB 12;
Pred. No. 3.3e-14;
L9; Mismatches 76;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 210.5; DB 12;
Pred. No. 2.6e-14;
9; Mismatches 76;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     349 AA.
                                                                                                                                                                                                                                                                                                                                                                        DB 12; Length 349;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 12; Length 348;
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                                                                                                                                                                                                                                                                                                             17;
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Db 144 SVGDVICSPCGFGTYSYTVSSADKCEPVPN-NTFNYIDVE 182

Search completed: January 27, 2001, 11:24:34 Job time: 116 sec

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GenCore version 4.5

Copyright (c) 1993 - 2000 Compugen Ltd.

OM protein - protein search, using sw model

Run on:

January 27, 2001, 11:24:56; Search time 17.62 Seconds
(without alignments)
317.076 Million cell updates/sec

Fitle:
Perfect score: 993
Sequence:

1 ETLPPKYLHYDPETGHQLLC.......QKGNATHDNVCSGNREATQK 173

Searched:
BLOSUM62
Gapop 10.0, Gapext 0.5

Searched: 88757 seqs, 32294092 residues

Total number of hits satisfying chosen parameters: 88757

Minimum DB seq length: 0
Maximum DB seq length: 2000000000
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database :

SwissProt_39:*

SUMMARIES

Score	Query Match 1	1	BB	ID	ription
300		461	ь ;	TNR2_HUMAN	P20333 homo sapien
297		474	_	TNR2_MOUSE	25119 mus m
270		289	_	CD40_MOUSE	mus
261		277	μ	CD40_HUMAN	2 home
242.5		435	۳	TNRC_HUMAN	homo
227	•	269	۳	CD40_BOVIN	bos t
226		325	-	VT2_SFVKA	sho
211		326	1	VT2_MYXVL	P29825 myxoma viru
210.5	•	349	ר	VC22_VARV	
	•	415	1	TNRC_MOUSE	
	•	427	ب	NGFR_HUMAN	
188.5	•	425	٢	NGFR_RAT	
184	٠	416	<u>ب</u>	NGFR_CHICK	gallus
177		256	_	41BB_MOUSE	
167	•	255	-	41BB_HUMAN	Q07011 homo sapien
167	•	323	ب	FASA_BOVIN	
163		271	_	OX40_RAT	P15725 rattus norv
160		455	_	TNR1_HUMAN	
159	•	454	ب	TNR1_MOUSE	
159		461	سو	TNR1_PIG	5 sus
152	٠	272	-	OX40_MOUSE	1 mus
148	٠	461	-	TNR1_RAT	4 rati
145		277	<u>بــر</u>	OX40_HUMAN	9
144.5		332	۲	FASA_PIG	6
144		335	,	FASA_HUMAN	
139		595	۳	CD30_HUMAN	
137.5		324	-	FASA_RAT	9
137		327	_	FASA_MOUSE	
135		471	_	TNR1_BOVIN	_
125		1680	_	FUR2_DROME	2 dros
118.5		1609	<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>	LMG1_HUMAN	
115		417	_	WSL1_HUMAN	*Q93038 h wsl-1 pro
113.5	11.4	260	_	CD27_HUMAN	P26842 homo sapien
	Score 300 297 270 261 242.5 227 227 220.5 188.5 199.5 188.5 188.5 199.5 188.5 184.1 184.1 184.1 184.5 114.5 114.5 114.5 114.5 118.5 118.5	Querry e 30.2 7 29.9 7 7 22.9 8 7 11.6 8 11.6 9 114.9 9 114.5 5 113.8 8 114.9 114.5 5 111.6 114.5	Query e Watch Length 0 30.2 461 0 27.2 99 1 26.3 277 7 22.9 26.9 22.4 42.9 22.8 32.5 19.0 42.5 19.0 42.7 16.8 22.5 11.6 42.7 16.8 25.5 7 16.8 25.5 7 16.8 25.5 7 16.8 25.5 7 16.8 25.5 7 16.8 25.5 7 16.8 25.5 7 16.8 25.5 7 16.8 32.3 7 16.8 32.3 7 16.8 32.3 7 16.8 32.3 7 16.8 32.3 7 16.9 461 14.5 33.2 7 13.8 32.4	Ouery Ou	Query e Match Length DB 7 29.9 474 1 0 27.2 289 1 1 26.3 277 1 6 22.8 325 1 5 21.2 349 1 5 11.0 427 1 16.8 256 1 16.8 256 1 16.8 256 1 16.8 256 1 16.8 256 1 16.8 256 1 16.9 4457 1 447 1 5 14.6 332 1 5 14.6 335 1 5 14.6 335 1 5 14.6 335 1 5 14.6 335 1 6 14.9 461 1 6 14.9 461 1 7 16.8 335 1 8 14.9 461 1 9 16.0 461 1 16.0 461 1 16.0 461 1 16.0 461 1 16.0 461 1 16.0 461 1 16.0 461 1 16.0 461 1 16.0 335 1 16.0 461 1 16.0 461 1 16.0 335 1 16.0 461 1 16.0 335 1 16.0 461 1 16.0 335 1 16.0 461 1 16.0 335 1 16.0 461 1 16.0 335 1 16.0 335 1 16.0 461 1 16.0 335 1 16.0 461 1 16.0 335 1 16.0 461 1 16.0 335 1 16.0 461 1 16.0 335 1 16.0 461 1 16.0 335 1 16.0 335 1 16.0 336 1 16.0 337 1 16.0 37 1 16.0

ALIGNMENTS

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SEQUENCE OF 22-40; 65-69; 136-141; 300-306 AND 346-362. "MEDLINE=91056048; PubMed=2173696;	[6]	Tumor necrosis factor receptors.";	urine. Evidence for immunological cross-reactivity with cell surface		0110215; PubMed	SEQUENCE OF 27-31.	Proc. Natl. Acad. Sci. U.S.A. 87:6151-6155(1990).	stration of a shed form of the receptor.";	"Complementary DNA cloning of a receptor for timor necrosis factor	Heller R.A., Song K., Onasch M.A., Fischer W.H., Chang D.,	0349572; PubMed=2166946;	<pre>[4] SEQUENCE OF 116-461 FROM N.A., AND PARTIAL SEQUENCE.</pre>	35:94-100(1996).	mapping and	I D.V., Desauvage F.J.,	P.S., Maris J.M., Sulman E.P., Jen		SEQUENCE FROM N.A.	[3]	Proc. Natl. Acad. Sci. U.S.A. 87:8331-8335(1990).	"A second tumor necrosis factor receptor gene product can shed a		Kohno T., Brewer M.T., Baker S.L., Schwartz P.E., King M.W.,	9	CHOHENCE EROM N A	Science 248:1019-1023(1990).	and viral proteins.";	fact	R.G.:	colam i beckmann w b Torzu	SEQUENCE FROM N.A.		викагуота; метагоа; Cnordata; Craniata; Vertebrata; Euteleostomi; Mammalia: Eutheria: Primates: Catarrhini: Hominidae: Homo			BINDING PROTEIN 2) (TBPII) (P80) (TNF-R2) (P75) (CD120B) (ETANERCEPT).	(Rel. 40, Last annotation update)	01-AUG-1991 (Rel. 19, Last sequence update)	(Rel. 17.	ID TNR2_HUMAN STANDARD; PRT; 461 AA.	

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TTTW
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or send a
                                                                                                                                                                                   EMBL;
EMBL;
PIR;
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EMBL;
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                       PFAM; PF00020; TNFR_c6; 4.

PROSITE; PS00652; TNFR_NGFR_1; 2.

PROSITE; PS50050; TNFR_NGFR_2; 4.

Receptor; Transmembrane; Glycoprotein; Repeat; Receptor; Phosphorylation; Pharmaceutical; 3D-structure.
                                                                                                                                                                                                                                                                                                        EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "Purification and partial amino acid sequential tumor necrosis factor receptors J. Biol. Chem. 265:20131-20138(1990).
                                                                                                                                                                                                                                                                                                                                                                                                           the European Bioinformatics Institute. The use by non-profit institutions as long modified and this statement is not removed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=99221490; PubMed=10206649; Park Y.C., Burkitt V., Villa A.R., Tong "Structural basis for self-association"
               SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Nature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Characterization of ligand binding,
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Lipari M.T.,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "Biochemical properties of the 75-kDa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Biol.
                                                                                                                                                        ; A35356; A35356.
; A36007; A36007.
; A36475; A36475.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PHARMACEUTICAL: AVAILABLE UNDER THE NAME ENBREL (IMMUNEX AND WYETH-AVERST). USED TO TREAT MODERATE TO SERVERE RHEUMATOID ARTHRITIS (RA). ENBREL CONSIST OF THE EXTRACELLULAR LIGAND-BINDING PORTION OF THERE LINKED TO AN IMMUGLOBULIN FC CHAIN. IT BINDS TO TNF-ALPHA AND BLOCKS ITS INTERACTIONS WITH RECEPTORS.
SIMILARITY: CONTAINS A LA-MGFR/TNFR-TYPE CYSTEINE-RICH REGION.
DATABASE: NAME-PROW; NOTE-CD guide CD120b entry;
WWW-"http://www.ncbi.nlm.nih.gov/prow/cd/cd120b.htm".
DATABASE: NAME-Enbrel; NOTE-Clinical information on Enbrel;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FUNCTION: RECEPTOR FOR TNF-ALPHA. HIGH APPROXIMATELY 5-FOLD LOWER AFFINITY FO SUBCELLULAR LOCATION: TYPE I MEMBRANE PTM: PHOSPHORYLATED; MAINLY ON SERINE
                                                                                                                                                                                                                                                   U52156; AAC50622.1;
U52156; AAC50622.1;
U52157; AAC50622.1;
U52158; AAC50622.1;
U52159; AAC50622.1;
U52160; AAC50622.1;
U52161; AAC50622.1;
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                                                                                                        191191;
                                                                                                                                                                                                                                                                                                                                                                                                                       SWISS-PROT entry is copyright. It is produced through a collaboratic een the Swiss Institute of Bioinformatics and the EMBL outstation European Bioinformatics Institute. There are no restrictions on it by non-profit institutions as long as its content is in no we
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LEVEL ON THREONINE RESIDUES.
                                                                                                                                 B35010; B35010
A23666; A23666
                                                                                                                                                                                                 U52164; AAC50622
M55994; AAA36755
                                                                                                                                                                                                                          U52162; AAC50622.1; U52163; AAC50622.1;
                                                                                                                                                                                                                                                                                                                                             M32315; AAA59929.1;
M35857; AAA63262.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            398:533-538(1999)
                                                                                                                                                                                                                                                                                                                                                                                    an email to license@isb-sib.ch).
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                                                                                            IPR001368;
                                                                                                                    12-APR-99
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ON: TYPE I MEMBRANE PROTEIN.
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NECROSIS FACTOR RECEPTOR
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TNR2_MOUSE STANDARD; PRT; 474 AA.

PJS119; P97893;

01-MAY-1992 (Rel. 22, Created)

01-MAY-1992 (Rel. 22, Last sequence update)

15-JUL-1999 (Rel. 38, Last annotation update)

TUMOR NECROSIS FACTOR RECEPTOR 2 PRECURSOR (TNF-R2) (P75).

TNERSF1B OR TNFR2 OR TNFR-2.
receptors for tumor necrosis factor.";
Mol. Cell. Biol. 11:3020-3026/1901.
[3]
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REPEAT
                                                                                                                                                                                                                                                                                                                       Wong
                                                                                                                        MEDLINE=91246168; PubMed=1645445; Goodwin R.G., Anderson D., Jerzy
                                                                                                                                                                                                                                              specific.
                                                                                                                                                                                                                                                                       "Cloning and exp
necrosis factor
                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A. MEDLINE=91187885; PubMed=1849278;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CARBOHYD
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                                                                                                                                                                        SEQUENCE FROM N.
                                                                                                                                                                                                                                                                                                                                                Lewis
                                                                                                                                                                                                                                                                                                                                                                                                                                               Mammalia;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      152 PGTETSDVVCKPCAPGTFSNTTSSTDICRPHQICNVVAI ---- PGNASRDAVCT 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     92
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10 YDPETGH-----
                                                                                                                                                                                                                                                                                                                         G.H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             YAPEPGSTCRLREYYDQTAQMCCSKCSPGQHAKVFCTKTSDTYCDSCEDSTYTQLWNWVP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ECVYCSPVCKELQSVKQECNRTHNRVCECEEGRYLEI - - - - - EFCLKHRSCPPGSGVVQ
                                                                                                                                                                                                                                                                                                                       M., Tartaglia L.A., Lee
3.H., Chen E.Y., Goeddel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            62; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                             Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Metazoa;
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                                                                                                    Anderson D., Jo
Jenkins N.A.,
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                                                                                                                                                                                                                                                                       receptors
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Rodentia;
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BY SIMILARITY.
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4 X TNFR-CYS.
TNFR-CYS 1.
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Pred. No. 5.1e-1
5; Mismatches
                                                                                                                                                                                                                                                                                                                         D. V.
                                                                                                                                                                                                                                                                                                                                                                                                                                          Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
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                                                                                                                                                                                                                          88:2830-2834(1991)
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نام 5.
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                                                                                                                        Davis T.,
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                                                                                                                                                                                                                                                                                                                                             G.L.,
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                                                                           1 and
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                                                                                                                           Brannan C.
                                                                                                                                                                                                                                                                                                                                                Rice
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SEQUENCE OF STRAIN-NOD;

1-26 FROM

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Jacob C.O., Liu J.; Submitted (JAN-1996) to

the

EMBL/GenBank/DDBJ databases

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EMBL; M59378; AAA40463.1; -.
EMBL; U39488; AAA85021.1; -.
EMBL; X87128; CAA60618.1; -.
EMBL; 838634; B38634.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                      REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                       TRANSMEM
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                                                                                                                                                                                                                                                                                                                                                                                                                                                           SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PFAM; PF00020; TNFR_c6; 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -i- SUBCELLULAR LOCATION: TYPE I MEMBRANE PROTEIN.
-i- SIMILARITY: CONTAINS A LA-NGFR/TNFR-TYPE CYSTEINE-RICH REGION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Kissonerghis M., Fell
Submitted (MAY-1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  the European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -!- FUNCTION: RECEPTOR FOR THE ALPHA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TISSUE=LIVER;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE OF 1-22 FROM
152 ASSRAPNGNVLCKACAPGTFSDTTSSTDVCRPHRICS----ILAIPGNASTDAVCA
                      110
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RPRO; IPRO01368;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SWISS-PROT entry is copyright. It is produced through a collaboration een the Swiss Institute of Bioinformatics and the EMBL outstation -
                   VQAGTPERNTVCKKCPDGFFSGETSSKAPCIKHTNCSTFGLLLIQKGNATHDNVCS
                                           RTCLSCSSSCTTDQVEIRACTKQQNRVCACEAGRYCALKTHSGSCRQCMRLSKCGPGFGV
                                                           DECVYCSPVCKELQSVKQECNRTHNRVCECEEGRYLEIEF-
                                                                                          YKPEPGYECQISQEYYDRKAQMCCAKCPPGQYVKHFCNKTSDTVCADCEASMYTQVWNQF 91
                                                                                                                  YDPETGH-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        P19438; 1NCF
                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PS00652; TNFR_NGFR_1;
PS50050; TNFR_NGFR_2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       non-profit institutions as long
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Transmembrane;
                                                                                                                                                                                                            69
195
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289
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120
165
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136
                                                                                                                                        Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TNFRSF1B.
                                                                                                                                                                                                                       119
164
203
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163
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                                                                                                                                                 29.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  lowes R., Feldmann M., Chernajovsky to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Z.A.
                                                                                                          -QLLCDKCAPGTYLKQHCTVRRKTLCVPCPDHSYTDSWHTS 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Glycoprotein; Repeat; Signal
                                                                                                                                                                                                 M.
                                                                                                                                       17;
                                                                                                                                                                                                       THER CYS 4.

BY SIMILARITY.

BY SIMILARITY.
                                                                                                                                       Score 297; DB
Pred. No. 9.5e
L7; Mismatches
                                                                                                                                                                                                                                                                                                                                                              TNFR-CYS
                                                                                                                                                                                                                                                                                                                                                                          TNFR-CYS
                                                                                                                                                                                                                                                                                                                                                                                      TNFR-CYS
                                                                                                                                                                                                                                                                                                                                                                                                CYTOPLASMIC (POTENTIAL) 4 X TNFR-CYS.
                                                                                                                                                                                                                                                                                                                                                                                                                       TUMOR NECROSIS EXTRACELLULAR (POTENTIAL.
                                                                                                                                                                                                 462EAE398C4D6563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       There are no rest
                                                                                                                                       DB 1; 1).5e-19;
nes 73;
                                                                                                                                                                                                                                                                                                                                                                                                                                 S FACTOR RECEPTOR (POTENTIAL).
                                                                                                                                                            Length 474;
                                                                                                                                                                                                CRC64;
                                                                                                                                       Indels
                                                                                                                                                                                                                       (POTENTIAL)
                                                                  CLKHRSCPPGSGV
                                                                                                                                                                                                            (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   restrictions
                                                                                                                                       24;
                     165
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RESULT 3
 EMBL; M83312; AAB08705.1; -. EMBL; M94126; AAA37404.1; JOIN EMBL; M94129; AAA37404.1; JOIN EMBL; M94128; AAA37404.1; JOIN EMBL; M94127; AAA37404.1; JOIN PIR; A46476; A46476.
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DOMAIN
REPEAT
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TRANSMEM
                                                                                                                                                 PROSITE;
                                                                                                                SIGNAL
CHAIN
                                                                                                                                                                                                                                                                                                                                      use
                                                                                                                                                                                                                                                                                                                                                 the
                                                                                                                                                                                                                                                                                                                                                                       This
                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=93094586; PubMed=1281194; Grimaldi J.C., Torres R., Kozak C.A., Howard M., Cockayne D.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Torres R.M., Clark E.A.;
Torres R.M., Clark E.A.;
"Differential increase of an alternatively polyadenylated mRNA particular increase of an alternatively polyadenylated mRNA particular increase of murine CD40 upon B lymphocyte activation.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-OCT-1996 (Rel. 34, Last sequence update)
15-JUL-1999 (Rel. 38, Last annotation update)
CD40L RECEPTOR PRECURSOR (B-CELL SURFACE ANTIGEN CD40) (BP50) 11 W40).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   P27512;
01-AUG-1992 (Rel. 23,
01-OCT-1996 (Rel. 34,
15-JUL-1999 (Rel. 38,
           CARBOHYD
                     REPEAT
                                  REPEAT
                                             REPEAT
                                                                                                                                                                         PFAM; PF00020;
                                                                                                                                                                                              HSSP; P25942; 1CDF.
MGD; MGI:88336; TNF
                                                                                                                                                                                                                                                                                                   or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                              entities requires a
                                                                                                                                                                                                                                                                                                                          modified
                                                                                                                                                                                                                                                                                                                                                          between
                                                                                                                                                                                                                                                                                                                                                                                                                                J. Immunol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN-BALB/C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRAIN=BALB/C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TNFRSF5 OR CD40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CD40_MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Torres R.M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REVISIONS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=92105763;
                                                                                                                                                                                                                                                                                                                                                                                                                "Genomic structure and chromosomal mapping of the murine CD4
J. Immunol. 149:3921-3926(1992).
-!- FUNCTION: RECEPTOR FOR A CYTOKINE LIGAND KNOWN AS CD40L.
                                                                                                                                        leceptor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2
                                                                                                                                                                                     NTERPRO;
                                                                                                                                                                                                                                                                                                                                                                                            SUBCELLULAR LOCATION: TYPE I MEMBRANE PROTEIN.
SIMILARITY: CONTAINS A LA-NGFR/TNFR-TYPE CYSTEINE-RICH REGION.
                                                                                                                                                                                                                                                                                                                                              European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                         SWISS-PROT entry is copyright. It is produced through een the Swiss Institute of Bioinformatics and the EN
                                                                                                                                                 PS00652; TNFR_NGFR_1; 1. PS50050; TNFR_NGFR_2; 4.
                                                                                                                                                                                                                                                                                                                         non-profit institutions as long and this statement is not removed.
                                                                                                                                       B-ce]
                                                                                                                                                                                     IPR001368; -
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216
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                                                                                                                                                                        TNFR_c6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TISSUE=LIVER;
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                                                                                                                                                                                               TNFRSF5.
                                                                                                                                       Glycoprotein;
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                                                                                                                                                                                                                                                                                                              license agreement
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4 X TNFR-CYS.
TNFR-CYS 1.
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N-LINKED (GLC
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                                                                                          POTENTIAL
                                                                                                    EXTRACELLULAR
                                                                                                                 CD40L RECEPTOR
                                                                                                                         POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Craniata; Vertebrata;
Sciurognathi; Muridae;
C791CB6D2FEA574E CRC64;
                                                                                                                                     Transmembrane;
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           (GLCNAC.
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                                                                             (POTENTIAL)
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                                                                                                    (POTENTIAL)
                                                                                                                                                                                                                                                                                                                          Usage
                                                                                                                                     Repeat; Signal
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         .) (POTENTIAL)
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CD40_HUMAN
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Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-MAY-1992 (Rel. 22, Created)
01-MAY-1992 (Rel. 22, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
CD40L RECEPTOR PRECURSOR (B-CELL SURFACE ANTIGEN
                                                                                                                                                                                                                                                                     This SWISS-PROT entry is copyright. It is produced through a collal between the Swiss Institute of Bioinformatics and the EMBL outs the European Bioinformatics Institute. There are no restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Singh J., Garber E., van Vlijmen H., Zheng Z., Naismith J.H., Thomas D.; "The role of polar interactions in th with its receptor CC40."; Protein Sci. 7:1124-1135(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Stamenkovic I., Clark E.A., Seed B.; "A B-lymphocyte activation molecule related factor receptor and induced by cytokines in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CD40_HUMAN
                                                                                                                                                                        entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                         modified and this statement
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       P25942;

    -!- SUBCELLULAR LOCATION: TYPE I MEMBRANE PROTEIN.
    -!- TISSUE SPECIFICITY: B-CELLS AND IN PRIMARY CARCINOMAS

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=98266353;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                the ligand binding domain Proteins 27:59-70(1997).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBO J. 8:1403-1410(1989)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    INFRSF5 OR CD40
                               INTERPRO,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "Construction and analysis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE-97189482;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (TUMOR NECROSIS FACTOR RECEPTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3D-STRUCTURE MODELING OF 26-186 IN COMPLEX WITH CD40L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3D-STRUCTURE MODELING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        142
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                                                                                                                                                                                                                                                                                                                                                                       SIMILARITY: CONTAINS A LA-NGFR/TNFR-TYPE CYSTEINE-RICH DATABASE: NAME-PROW; NOTE-CD guide CD40 entry; WWW-"http://www.ncbi.nlm.nih.gov/prow/cd/cd40.htm".
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FUNCTION: RECEPTOR FOR A
                                                      109535;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VCKKCPDGFFSGETSSKAPCIKHTNCSTFGLLLIQKGNATHDNVC
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                                                                                                  S04460;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EP - - NQGLRVKKEGTAESDTVCTCKEGQHCTSKDCEACAQHTPCIPGFGVMEMATETTDT
                                                                                                                         X60592; CAA43045.1;
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                            IPR001368;
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  TNFR_c6;
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Pred. No. 1.3e-16;
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cell receptor CD40.";
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                                                                                                                                                                                                                      Usage
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       Ehrenfels B., Browning J.L., Walter B.N., Good "A lymphotoxin-beta-specific receptor."; Science 264:707-710(1994).
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DOMAIN
                                                                        "Construction and evaluation of a hncDNA library of human transcribed sequences derived from a somatic cell hybrid." Genomics 16:214-218(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PROSITE;
                                                                                                                                                                                     01-JUN-1994 (Rel. 29, Created)
01-JUN-1994 (Rel. 29, Last sequence up
01-OCT-2000 (Rel. 40, Last annotation
LYMPHOTOXIN-BETA RECEPTOR PRECURSOR (T
2 RELATED PROTEIN) (TUMOR NECROSIS FAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CHAIN
                                                                                                                MEDLINE=93252381; PubMed=8486360;
                                                                                                                                                                              LTBR OR TNFCR OR TNFRSF3.
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                                                             FUNCTION
                                                                                                                          TISSUE=LIVER;
                                                                                                                                   SEQUENCE
                                                                                                                                                             Eukaryota;
                                                                                                                                                                     Homo sapiens (Human)
                                                                                                                                                                                                                                          TNRC_HUMAN
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                                                                                                                                                                                                                                                                                                                                                                           LHYDPETG----
                                                                                                                                                                                                                                                                                                                        HQHKYCDPNLG-
                                                                                                                                                                                                                                                                                                                                                                                           58; Conservative
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PS50050;
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                                                                                                                                                             Metazoa;
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TNFR_NGFR_2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                       180
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                                                                                                                                                    Chordata;
Primates;
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                                                                                                                                                                                                                                                                                                                                                                                                     26.3%;
33.9%;
         FOR THE LYMPHOTOXIN-BETA.
                                                                                                                                                                                                                                                                                                                                                                                                                                        MW;
                                                                                                                                                                                     t annotation update)
PRECURSOR (TUMOR NECROSIS FACTOR RECEPTOR).
                                                                                                                                                                                                                                                                                                                                                                                             23;
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TNFR-CYS 1.
TNFR-CYS 2.
TNFR-CYS 3.
TNFR-CYS 4.
                                                                                                                                                                                                                                                                                                                                                                                           Score 261; DB
Pred. No. 7.2e
23; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                      N-LINKED (GLCNAC. . .) (POTENTIAL).
N-LINKED (GLCNAC. . .) (POTENTIAL).
; BC8776EC2C4A5680 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   POTENTIAL.
CYTOPLASMIC
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                                                                                                                                                    Craniata; Vertebrata; Catarrhini; Hominidae;
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                                   Goodwin
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                                  R.G.,
                                                                                                                                                                                                                                                                                                                                                                                                             Length 277;
                                          C.F.,
POSSIBLE FUNCTFON IN
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Smith C.F
                                   Smith
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Best Local :
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CD40L RECEPTOR PRECURSOR
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CARBOHYD
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REPEAT
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DOMAIN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This SWISS-PROT entry is copyright. It is produced through a collaboration
                       TNFRSF5 OR
                                                                                      CD40_BOVIN
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HSSP; P25942;
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SUBCELLULAR LOCATION: TYPE I MEMBRANE PROTEIN.
SIMILARITY: CONTAINS A LA-NGFR/TNFR-TYPE CYSTEINE-RICH REGION.
                                                                                                                                                              CKKCPDGFFSGETSSKAPCIKHTNCSTFGLLLIQKGNATHDNVCSGNRE 169
                                                                                                                                         CVPCKAGHFQNTSSPSARCQPHTRCENQGLVEAAPGTAQSDTTCKNPLE
                                                                                                                                                                                    VMGLEEIAPCTSKRKTQCRCQPGMFCAAWALECTHCELLSDCPPGTEAELKDEVGKGNNH
                                                                                                                                                                                                        LQSVKQ--ECNRTHNRVCECEEGRY-----LEIEFCLKHRSCPPGS-GVVQAGTPERNTV 120
                                                                                                                                                                                                                              YYEPQ--HRICCSRCPPGTYVSAKCSRIRDTVCATCAENSYNEHWNYLTICQLCRP-CDP
                                                                                                                                                                                                                                                  HYDPETGHQLLCDKCAPGTYLKQHCTVRRKTLCVPCPDHSYTDSWHTSDECVYCSPVCKE 68
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                                                                                                                                                                                                                                                                                    Similarity
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                      CD40.
Metazoa; Chordata; Craniata; Vertebrata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 email to license@isb-sib.ch).
            (Bovine).
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35, Last sequence update)
38, Last annotation updat
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TNFR_NGFR_2;
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BY SIMILA
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Pred. No. 4.3e-14;
5; Mismatches 83
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                              ation update)
SURFACE ANTIGEN CD40) (FRAGMENT).
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          Viruses; dsDNA viruses,
                                    Shope fibroma virus (strain Kasza) (SFV)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REPEAT
REPEAT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE-97281252; PubMe Hirano A., Brown W.C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PROSITE; PS00652; PROSITE; PS50050;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Immunology 90:294-300(1997).
-I- FUNCTION: RECEPTOR FOR A CYTOKINE LIGAND KNOWN AS CD40L.
-I- SUBCELLULAR LOCATION: TYPE I MEMBRANE PROTEIN.
-I- SIMILARITY: CONTAINS A LA-NGFR/TNFR-TYPE CYSTEINE-RICH REGION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cattle.";
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                                                                                                                                                                                                                                                                                 ATGLLDTVCEPCPLGFFSNVSSAFEKCHRWTSCERKGLVEQHVGTNKTDVVC
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PS50050; TNFR_NGFR_2; 1.
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SOLUBLE RECEPTOR PRECURSOR
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              RNA stage;
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Pred. No. 6e-13;
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                Poxviridae;
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Chordopoxviri
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EMBL; A23727; CAAV__
PIR; B43692; B43692.
uSSP; p19438; ITNR.
TPR001368;
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PROSITE; PS00552; TNER_NGFR_2; 1
Receptor; Glycoprotein; Repeat; 1
SIGNAL 1 1 6 POT
CHAIN 1 7 325 TUM
DOMAIN 27 186 4 X
REPEAT 27 62 TNEF
REPEAT 105 147 TNEF
REPEAT 105 147 TNEF
REPEAT 105 105 N-L;
CARBOHYD 105 105 N-L;
CARBOHYD 205 N-L;
CARBOHYD 238 238 N-L;
CARBOHYD 236 N-L;
CARBOHYD 205 N-L;
CARBOHYD 216 N-L;
CARBOHYD 217 N-L;
CARBOHYD 218 N-L;
CARBOHYD
                                          VT2_MYXVL
P29825;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              use by non-profit institutions as long modified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PFAM; PF00020;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  entities requires a license agreement (s or send an email to license@isb-sib.ch).
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"T2 open reading frame from the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=91207415; PubMed=1850261; Smith C.A., Davis T., Wignall J.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A. MEDLINE=87321103; PubMed=2820128;
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FUNCTION: BINDS TO THF-ALPHA AND BETA. PROBAB
REACH CELLULAR TARGET AND THEREBY DEAMPENING
ANTIVIRAL EFFECTS OF THE CYTOKINE.
                                                                                                                                                                                                                                   CPPHTYSDSLSPTERCGTSFNYISVGFNLYPVNETSCTT-
                                                                                                                                                                                                                                                                                                                                                                                                     QSVKQECNRTHNRVCECEEGRYLEIE-----FCLKHRSCPPGSGVVQAGTPERNTVCKK 123
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POTENTIAL.
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4 X TNER-CYS 1.
TNER-CYS 1.
TNER-CYS 2.
TNER-CYS 3.
TNER-CYS 4.
N-LINKED (GLCNAC. . . ) (
N-LINKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 226; DB
Pred. No. 8.7e
18; Mismatches
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3.7e-13;
nes 68;
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                                 RESULT 9
VC22_VARV
ID VC22_VARV
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Best Local
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SEQUENCE
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01-APR-1993
15-JUL-1999
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VIROLOGY 184:370-382(1991).

-!- FUNCTION: BINDS TO TNF-ALPHA AND BETA. PROBABLY PREVENTS TO REACH CELLULAR TARGET AND THEREBY DEAMPENING THE POTENTIAL ANTIVIRAL EFFECTS OF THE CYTOKINE.

ANTIVIRAL EFFECTS OF THE CYTOKINE.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; M95181; AAA46632.
EMBL; A23729; CAA01688.
PIR; A40566; GQVZML.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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MEDLINE=91335768; PubMed=1651597;
Upton C., Macen J.L., Schreiber M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Myxoma virus (strain Lausanne)
Viruses; dsDNA viruses, no RNA
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Myxoma virus expresses a secreted protein with homology necrosis factor receptor gene family that contributes to
                                                                                    98
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AVSSTETCTSSFNYISVEFNLYPVNDTSCTT
                                           ETSSKAPC-
                                                                                                                         RTHNRVCECEEGRYLEIE-----FCLKHRSCPPGSGVVQAGTPERNTVCKKCPDGFFSG 1.31
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Last annotation update)
SOLUBLE RECEPTOR PRECURSOR
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NGFR_2; 2.
Repeat; Signal.
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TNFR-CYS 1
TNFR-CYS 2
TNFR-CYS 3
TNFR-CYS 4
N-LINKED (GLCNAC
N-LINKED
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Pred. No. 1.7e
20; Mismatches
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             Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Genes of variola and vaccinia viruses protective mechanisms."; FEBS Lett. 319:80-83(1993).
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Viruses; dsDNA viruses,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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TNFR-CYS 1.
TNFR-CYS 2.
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Pred. No. 2e-11;
9; Mismatches
               Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
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NFR-CYS 2.
D45D40B5C6E780EF CRC64;
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HYDPETGHQLLCDKCAPGTYLKQHCTVRRKTLCVPCPDHSYTDSWHTSDECVYCSPVCKI:

Query Match Best Local S Matches 48

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EMBL; L38423; AAB00846.1;
EMBL; U30798; AAA81334.1;
HSSP; P25942; ICDF.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=96072804; PubMed=7594541;
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Immunol. 155:5280-5288(1995).
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PS50050; TNFR_NGFR_2; 3.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RECEPTOR
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RESULT 11

NGFR, HUMAN

ID NGFR_H

AC P08138

DT 01-AUG

DT 01-CT

DE LOW-AF

DE (GP80-
GN NGFR 0

OS HOMO S

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        TRANSMEM
DOMAIN
DOMAIN
                                                                                                                                                                                                                         the European Bioinformatics Institute, use by non-profit institutions as lon modified and this statement is not remove entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE OF 1-22 FROM N.A.
MEDLINE-89095903; Pubmed-2850481;
Sehgal A., Patil N., Chao M.;
"A constitutive promotion."
                                                                                                                                                                               EMBL; M14764; AAB59544.1;
EMBL; M21621; AAA36363.1;
PIR; A25218; GQHUN.
HSSP; P07174; 1NGR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=87051725; PubMed=3022937; Johnson D., Lanahan A., Buck C.R., Bothwell M., Chao M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-AUG-1988 (Rel. 08, Created)
01-AUG-1988 (Rel. 08, Last sequence update)
01-CCT-2000 (Rel. 40, Last annotation update)
LOW-AFFINITY NERVE GROWTH FACTOR RECEPTOR PRECURSOR
                                                                   Phosphorylation; SIGNAL 1
                                                                                                                                                                       HSSP; P07174
MIM; 162010;
                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - \frac{1}{2}
                                       DOMAIN
                                                          CHAIN
                                                                                       Receptor;
                                                                                                           PROSITE;
                                                                                                                     PROSITE;
                                                                                                                                                  INTERPRO; IPRO01368;
                                                                                                                                                                                                                                                                                                                                                                    ÷
                                                                                                                                                                                                                                                                                                                                                                                                receptor gene."
Mol. Cell. Biol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "Expression and structure Cell 47:545-554(1986).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NGFR OR TNFRSF16.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NGFR_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (GP80-LNGFR)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  119
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                                                                                                                                                                                                                                                                                                                                                                                                                   constitutive promoter directs expression
                                                                                                                                                                                                                                                                                                              BOND FORMATION.
SUBCELLULAR LOCATION: TYPE I MEMBRANE PROTEIN.
SUBCELLULAR LOCATION: TYPE I MEMBRANE PROTEIN.
PMM: N- AND O-GLYCOSYLATED AND IS PHOSPHORYLATED ON SERINE.
SIMILARITY: CONTAINS A LA-NGFR/TNFR-TYPE CYSTEINE-RICH REGISIMILARITY: CONTAINS 1 DEATH DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                   NT-3, AND NT-4.
SUBUNIT: NGF RECEPTOR CAN FORM
                                                                                                                                                                                                                                                                                                                                                                                       FUNCTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VNCVPCKPGHFQNTSSPRARCQPHTRCEIQGLVEAAPGTSYSDTICKNPPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TVCKKCPDGFFSGETSSKAPCIKHTNCSTFGLLLIQKGNATHDNVCSGNRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VLGFEEVAPCTSDRKAECRCQPGMSCVYLDNECVHCEEERLVLCQPGTEAEVTDEIMDTD
                                                                                                                                PF00020; TNFR_c6; 4. PF00531; death; 1.
                                                                                               PS00652; TNFR_NGFR_1; 3. PS50050; TNFR_NGFR_2; 4. PS50017; DEATH_DOMAIN; 1
                                                                                       Neurogenesis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                  Biol. 8:3160-3167(1988)
         29
251
273
31
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                                                                                                                                                                                                                                                                                                                                                                                       LOW AFFINITY
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                                                                   Signal.
28
        250
272
427
189
                                                          427
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Primates;
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                                                                                       Transmembrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                of the
                                                                                                                                                                                                                                                                                                                                                                                       RECEPTOR
                                                                                                                                                                                                                                                     is not removed.
        CYTOPLASMIC (POTENTIAL) 4 X TNFR-CYS.
                          LOW-AFFINITY NERVE GROWTH FACTOR RECEPTOR. EXTRACELLULAR (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                human
                                                                                                                                                                                                                                                                                                                                                                   A HOMODIMER
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                                                                                     Glycoprotein; Repeat;
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Matches
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P07174;
01-APR-1988
01-APR-1988
01-APR-1980
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DOMAIN
      STRUCTURE BY NNR OF 334-418.
MEDLINE=97449145; PubMed=9305641;
Liepinsh E., Ilag L.L., Otting G.,
"NMR structure of the death domain
EMBO J. 16:4999-5005(1997).
                                                                                                                                                                                                                     Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                       RAT
                                                                  "Regulatory elements and transcriptional and retinoic acid of the rat nerve growtl Gene 121:247-254(1992).
                                                                                                MEDLINE=93077038; PubMed=1446821; Metsis M., Timmusk T., Allikmets R.,
                                                                                                                    TISSUE=LIVER;
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                                                                                                                             SEQUENCE OF 1-22
                                                                                                                                                  Nature 325:593-597(1987).
                                                                                                                                                                                                                                                                          LOW-AFFINITY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DOMAIN
                                                                                                                                                                                                                                                                (GP80-LNGFR)
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Local (
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(Rel. 07, Last sequence update)
(Rel. 40, Last annotation update)
NERVE GROWTH FACTOR RECEPTOR P
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                                                                                                                                                                                                                                                                ICD).
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34.1%;
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Pred. No. 8.6e
21; Mismatches
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TNFR-CYS 2.
TNFR-CYS 3.
TNFR-CYS 4.
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                                                                                                                                                                                                                                                                                                                            PRT;
                                                                            growth
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SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
MEDLINE-87115859; PubMed=3027580;
Radeke M.J., Misko T.P., Hsu C., Herzenberg
Radeke M.J., misko T.P., Hsu C., Herzenberg
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SER/THR-RICH
N-LINKED (GLCNAC. . .) (POT OF THE PROPERTY OF THE PROPER
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Sciurognathi; Muridae;
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RECEPTOR PRECURSOR
Ibanez C.F.; of the p75 n
                                                                                                                                                                                                                                                                                                                                                   Saarma M.,
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                                                                                                                                                                                                                                                             regulation by testosterone h factor receptor promoter.
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    neurotrophin
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                                                                                                                                                                                                                                                        promoter.";
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receptor.";
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SUBCELLULAR LOCATION: TYPE PTM: N- AND O-GLYCOSYLATED SIMILARITY: CONTAINS A LA-N SIMILARITY: CONTAINS 1 DEAT

: TYPE I MEMBRANE PROTEIN.

YLATED AND IS PHOSPHORYLATED ON SEF

A LA-NGFR/TWEF-TYPE CYSTEINE-RICH

1 DEATH DOMAIN.

SERINE

REGION

FUNCTION: LOW AFFINITY NT-3, AND NT-4.
SUBUNIT: NGF RECEPTOR BOND FORMATION.

CAN

FORM A HOMODIMER

THROUGH DISULFIDE

LOW AFFINITY RECEPTOR WHICH CAN BIND TO NGF, BDNF

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; X05137;
EMBL; X61269;
PIR; A26431; A
PDB; 1NGR; 29-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Receptor; Neurogenesis;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INTERPRO; IPR000488; -.
   137
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nes 43; Conserv
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APCIKHTNC
                                                                                                                                                                                                                                                      CDKCAPGTYLKQHCTVRRKTLCVPCPDH-SYTDSWHTSDECVYCSPVCKELQSVKQECNR
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                                                            ADDAVCRCAYGYYQDEETGHCEACSVCEVGSGLVFSCQDKQNTVCEECPEGTYSDEANHV
                                                                                                                      THNRVCECEEGRYLEIE--FCLKHRSCPPGSGVVQAGTPERNTVCKKCPDGFFSGETSSK
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DEATH DOMAIN.
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                      Score 188.5;
Pred. No. 1.9e
23; Mismatches
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EXTRACELLULAR
POTENTIAL.
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4 X THER-CYS.
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No. 1.
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There are no rest
ong as its content
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les 58;
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RESULT 13

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ID MGFR_CHICK
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DT 01-NOV
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INTERPRO; IPRO01368; -.
PFAM; PF00020; TNFR_C6;
PFAM; PF00531; death; 1.
PROSITE; PS00652; TNFR_NG
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01-OCT-2000 (
LOW-AFFINITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDIINE-90152140; PubMed-2154393;
Heuer J.G., Fatemie-Nainie S., Wheeler E.F., Bothwell M.;
"Structure and developmental expression of the chicken NGF
Dev. Biol. 137:287-304(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gallus gallus
Eukaryota; Mei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "Structure and developmental expression receptor in the chicken central nervous Neuron 2:1123-1134(1989).
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                                                                                                                                                                                                                                                                                                                                                                                                  Phosphorylation;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       163
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NT-3, AND
SUBUNIT: N
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; A60504; A60504.
P; P07174; INGR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PTM: N- AND O-GLYCOSYLATED AND IS PHOSPHORYLATED ON SERINE. SIMILARITY: CONTAINS A LA-NGFR/TNFR-TYPE CYSTEINE-RICH REGION SIMILARITY: CONTAINS 1 DEATH DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SUBCELLULAR LOCATION: TYPE I
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                                                                                                                                                                                                                                                                                                                                                                                                                                                         PS00652;
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                                                                                                                                                                                                                                                                                                                                                                                                                                       PS50017;
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                                                                                                                                                                                                                                                                                                                                                                                                                     Neurogenesis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        lus (Chicken).
Metazoa; Chordata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (Rel. 16, Created)
(Rel. 16, Last sequence update)
(Rel. 40, Last annotation update)
Y NERVE GROWTH FACTOR RECEPTOR PRECURSOR (NGF RECEPTOR)
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                                                                                                                                                                                                                                                                                                                                                                                                Signal
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DEATH_DOMAIN; 1.
nesis; Transmembrane;
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mp G., Helder J.C.,
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TNFR-CYS 1.
TNFR-CYS 2.
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TNFR-CYS
TNFR-CYS
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RECEPTOR.
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RESULT 14
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                                                                                                                                    Pollok K.E., Kim
Kwon B.S.;
                                                                                                                                                                                       antigen 4-1BB.
                                                                                                                                                                                                                                                                                                                                                              01-FEB-1991 (Rel. 17, Created)
01-FEB-1991 (Rel. 17, Last Sequence update)
15-JUL-1999 (Rel. 38, Last annotation update)
4-1BB LIGAND RECEPTOR PRECURSOR (T-CELL ANTIG
TNERSE9 OR ILA OR LY63 OR CD137 OR CD157.
                                                                                                                          Kwon B.S.;
"Inducible T
                                                                                                                                                       CHARACTERIZATION, MEDLINE-93139510;
                                                                                                                                                                                                                    MEDLINE-94179805; PubMed-8133039;
                                                                                                                                                                                                         "Genomic organization
                                                                                                                                                                                                                                          SEQUENCE FROM STRAIN-BALB/C
                                                                                                                                                                                                                                                                       Proc. Natl.
                                                                                                                                                                                                                                                                                         MEDLINE=89184547; Pu
Kwon B.S., Weissman
                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                       Mus musculus (Mouse)
                                                                                                              function.";
                                                                                                                                                                                                                                                                                  "cDNA sequences of
                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                              1BB_MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  153
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                  SUBCELLULAR LOCATION: TYPE I MEMBRANE PROTEIN.
TISSUE SPECIFICITY: EXPRESSED ON THE SURFACE OF ACTIVAT INDUCTION: OPTIMAL BY PMA AND IONOMYCH.
SIMILARITY: CONTAINS A LA-NGFR/TNFR-TYPE CYSTEINE-RICH
                                                          FUNCTION: RECEPTOR FOR THE PUTATIVE ACTIVE DURING T CELL ACTIVATION. SUBUNIT: PRINCIPALLY AN HOMODIMER, B ASSOCIATES WITH P56-LCK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VDPCLPCTICEE-NEVMVKECTATSDAEC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KAPCIKHTNCSTFGLLLIQKGNATHDNVC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CKACNLGEGVVQPCGV-NQTVCEPCLDSVTYSDTVSATEPCKPCTQ-CVGLHSMSAPCVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDKCAPGTYLKQHCTVRRKTLCVPCPDH·SYTDSWHTSDECVYCSPVCKELQSVKQECNR 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                              FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              416
                                                                                                     150:771-781(1993).
                                                                                                                                                                                                                                                                      nces of two inducible T-cell genes.";
Acad. Sci. U.S.A. 86:1963-1967(1989).
                                                                                                                                                                                      152:2256-2262(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                         cell antigen 4-1BB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A,
                                                                                                                                                                                                                                                                                                                                                                                                                              STANDARD;
                                                                                                                                            Y.-J., Zhou
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         YFQDELSGSCKECSICEVGFGLMFPCRDSQDTVCEECPEGTFSDEANF
                                                                                                                                                       AND SEQUENCE OF PubMed=7678621;
                                                                                                                                                                                                                                                                                                     PubMed=2784565;
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BY SIMILARITY.
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BY SIMILARITY.
C-> Y (IN REF. 2).
T-> K (IN REF. 2).
N-> R (IN REF. 2).
N-> R (IN REF. 2).
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Pred.
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Sciurognathi; Muridae;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6BCEAAB54F4D2D56 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                   Pickard R.T.;
                                                                                                                                            Hurtado J.,
                                                                                                                          Analysis
                                                                                                                                                                 25-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    184; DB 1;
No. 4.5e-09;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180
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                                                                      BUT
                                                                                          CYTOKINE
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                                                                                                                        expression
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                                                                                                                                                                                                                                                                                                                                                                           4-1BB)
                                                                      FOUND
                                                                                           4-1BBL.
                                                                                                                                              K.K.,
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                                                                                                                                                                                                          of.
                                                                                                                                                                                                                                                                                                                                   Euteleostomi;
; Murinae; Mus
                                        ACTIVATED T-CELLS
                                                                                                                                                                                                          the
                                                                      AS
                                                                      A
                                                                                           POSSIBLY
                                                                                                                                                                                                          T-cell
                    REGION
                                                                      MONOMER
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                                                                                                                                               R.T.
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RESULT 15
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Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                               41BB HUMAN STANDARD; PKI; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007011; 2007
                                                          TISSUE-BLOOD;
TISSUE-BLOOD;
MEDLINE-94374434; PubMed-8088337;
Alderson M.R., Smith C.A., Tough T.W.,
Alderson M.R., Baker E., Sutherland
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Receptor;
SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Entrepean Bioinformatics Institute. There are no restrained by non-profit institutions as long as its content modified and this statement is not removed. Usage by and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HSSP; P25942; 1CDF.
MGD; MGI:1101059; TNI
INTERPRO; IPR001368;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; J04492; AAA40167.1;
EMBL; U02567; AAA93113.1;
EMBL; B32393; B32393.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                      Mammalia;
                                                                                                                                                                                                                       Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROSITE; PS00652; TNFR_NGFR_1; PROSITE; PS50050; TNFR_NGFR_2; Receptor; Glycoprotein; Repeat
                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 139
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDKCAPGTYLKQHCTVRRKTLCVPCPDHSYTDSWHTSDECVYCSPVCKELQSVKQECNRT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                    Eutheria;
                                                                                                                                                                                                                     Metazoa;
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                  24:2219-2227(1994)
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187
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Primates;
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27598
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30.1%;
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                                                            characterization
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TNER-CYS 1.

TNER-CYS 2.

TNER-CYS 3.

TNER-CYS 4.

N-LINKED (GLCNAC. . . ) (POTENTIAL.)

N-LINKED (GLCNAC. . . ) (POTENTIAL.)

N-LINKED (GLCNAC. . . ) (POTENTIAL.)

N-LINKED (GLCNAC. . . ) (POTENTIAL.)
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CYTOPLASMIC
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                                                                                                                                                                                                    Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      177;
No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LIGAND RECEPTOR
                                                                             Davis-Smith T., G.R., Din W.S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Transmembrane
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.2e-08;
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                                                                           Armitage ".J.,
Goodwin R.G.:
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Best Local Similarity
Matches 44; Conserv
                                                                                                                                                                                                                                                        CARBOHYD
CARBOHYD
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                  REPEAT
REPEAT
REPEAT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; U03397; AAA53133.1; -.
EMBL; L12964; AAA62478.1; -.
HSSP; P19438; 1EXT.
MIM; 602250; -.
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Kwon B.S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INTERPRO; IPRO01368; -.
PFAM; PF00020; TNFR_c6; 2.
PROSITE; PS00652; TNFR_NGFR_1; 1.
PROSITE; PS50050; TNFR_NGFR_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDIJNE-94085794; PubMed-8262389;
Schwarz H., Tuckwell J., Lotz M.;
Schwarz H., Tuckwell J., Lotz M.;
"A receptor induced by lymphocyte activation (ILA): a new member of the human nerve-growth-factor/tumor-necrosis-factor receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A. TISSUE=BLOOD;
                                                                                                                                                                                                                                                                                                                                                               DOMAIN
                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                             TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Receptor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           + +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Characterization of human homologue of 4-1BB and its ligand.";
Immunol. Lett. 45:67-73(1995).

I-- FUNCTION: RECEPTOR FOR THE PUTATIVE CYTOKINE 4-1BBL. POSSIBLY ACTIVE DURING T CELL ACTIVATION.

-1- SUBCELLULAR LOCATION: TYPE I MEMBRANE PROTEIN.

-1- TISSUE SPECIFICITY: EXPRESSED ON THE SURFACE OF ACTIVATED T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gene 134:295-298(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=95347766; PubMed=7622190;
Zhou Z., Kim S., Hurtado J., Lee Z.H., Kim K.K., Pollok K.E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
121 CFGTFNDQ--KRGICRPWTNCSLDGKSVLVNGTKERDVVC 158
                          125 PDGFFSGETSSKAPCIKHTNCSTFGLLLIQKGNATHDNVC 164
                                                            72
                                                                                         66
                                                                                                                     16 LNFERTRSLODPCSNCPAGTF----CDNNRNQICSPCPPNSFSSAGGQRTCDICRQCKGV 71
                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SIMILARITY: CONTAINS A LA-NGFR/TNFR-TYPE CYSTEINE-RICH REGION DATABASE: NAME-PROW; NOTE-CD guide CDw137 entry; WWW-"http://www.ncbi.nlm.nlh.gov/prow/cd/dw137.htm".
                                                         FR----TRKECSSTSNAECDCTPGFHCLGAGCSMCEQDCKQGQELTKKG-----CKDC
                                                                                       CKELQSVKQECNRTHNRVCECEEGRYLEIEFC-LKHRSCPPGSGVVQAGTPERNTVCKKC 124
                                                                                                                                               LHYDPETGHOLLCDKCAPGTYLKQHCTVRRKTLCVPCPDHSYTDS--WHTSDECVYCSPV 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Glycoprotein;
                                                                                                                                                                                                                                                         107
255 AA;
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18 186

18 7 213

14 255

7 159

118

159

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119

107

86

7 27899 MW;
                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                     18
187
187
214
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138
                                                                                                                                                                           16.8%; Score 167; DB 1; 27.5%; Pred. No. 8.3e-08; tive 24; Mismatches 72;
                                                                                                                                                                                                                                                                                                                                                                                                                                        Repeat; Signal; Transmembrane.
POTENTIAL.
                                                                                                                                                                                                                                                  TNFR-CYS 3.

N-LINKED (GLCNAC. . .) (POTENTIAL).

N-LINKED (GLCNAC. . .) (POTENTIAL).

K -> R (IN REF. 2).

F3A563FE5EF00460 CRC64;
                                                                                                                                                                                                                                                                                                                                TNFR-CYS
                                                                                                                                                                                                                                                                                                                                                             CYTOPLASMIC (POTENTIAL).
3 X TNFR-CYS.
                                                                                                                                                                                                                                                                                                                                                                                           EXTRACELLULAR (POTENTIAL). POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                          4-1BB LIGAND RECEPTOR.
                                                                                                                                                                                                           Length 255;
                                                                                                                                                                              Indels
                                                                                                                                                                              20;
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Search completed: January 27, 2001, 11:24:57 Job time: 139 sec

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Run on:
                                                                                  OM protein - protein search,
                                          January 27,
                                                                                                                                                GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd
                                          2001, 11:23:12 ;
                                                                                  using sw model
Search time 25.38 Seconds (without alignments) 462.837 Million cell upda
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Title: Perfect score: US-09-389-545-2_COPY_22_194 993

Sequence: ETLPPKYLHYDPETGHQLLC..... .QKGNATHDNVCSGNREATQK 173

Million cell updates/sec

bring table: BLOSUM62 Gapop 10.0 , Gapext 0.5

195891 segs, 67900655 residues

Total number of hits satisfying chosen parameters:

Minimum DB Maximum DB seq length: 2000000000 length: 0

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database PIR_66:* pir1:*
pir2:*
pir3:*
pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

29	28	27	26	. 25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	ω	2	1	NO.	Result	
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CD30 antigen precu	ptosis-me	pro		н	OD.		tumor necrosis fac		tumor necrosis fac	OX40 antigen precu	lymphocyte activat	4-1BB - human	T-cell antigen 4-1	growth		٦ ۲	G2R protein - vari	~	pothetical	protein -	otein – ra	-	B-cell activation	B cell-associated	l-associat	necrosis	necros	e murine tumou	Description		

trophozoit surfac	A48579	N	667	11.0	109.5	Ü
CD27 antigon precu	A49053	1	250	11.0	109.5	44
agrin precusor -	AGCH	1	1955	11.2	111	3
laminin quene-1 ch	MMMSB2	_	1607	11.4	113.5	42
hypothetical prote	T25473	N	643	11.5	114.5	1
hypothetical prote	T26972	N	1111	11.6	115.5	0
laminin damma-1 ch	ммнив2	_	1609	11.9	118.5	39
CD27 antigen precu	A46517	۱	260	11.9	118.5	38
serine proteinase	S34583	N	1548	12.0	119.5	37
oocyst wall protei	S36016	N	1252	12.1	120	36
oocyst wall protei	A48456	N	786	12.1	120	3
furin (EC 3.4.21.7	A43434	N	1680	12.6	125	34
subtilisin-like pr	JC6148	N	915	12.6	125	$\frac{3}{3}$
subtilisin-like pr	G02428	N	899	12.6	125	32
apoptosis mudiatin	A46484	N	327	13.8	137	31
Fas antion or precur	JC2395	N	324	13.8	137.5	30

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ALIGNMENTS

A;Cross-references: EMBL:X76401; NID:g433830; P:EDN:CAA53981.1; PID:g: <831 C;Superfamily: tumor necrosis factor receptor type 2; NGF receptor repeat homology F;151-188/Domain: NGF receptor repeat homology <NGF> gene murine tumour necrosis factor receptor 2 protein - mouse (fragment) C;Species: Mus musculus (house mouse) C;Date: 02-Jul-1996 #sequence_revision 02-Jul-1996 #text_change 23-Jul-1999 A;Status: preliminary; translated from GB/EMBL/DDBJA;Molecule type: mRNAA;Residues: 1-459 <RES> A; Title: Allelic variation of the type 2 tumor necrosis factor receptor gene. A; Reference number: I48854; MUID:95178848 R;Powell, E.E.; Wicker, L.S.; Peterson, L.B.; Todd, J.A. Mamm. Genome 5, 726-727, 1994 A; Reference number: A; Accession: I48854 C; Accession: I48854

밁 οy 망 9 Best Local Similarity Matches 62; Conserv Query Match 137 ASSRAPNGNVLCKACAPGTFSDTTSSTDVCRPHRICS----ILAIPGNASTDAVCA 1 . (110 VQAGTPERNTVCKKCPDGFFSGETSSKAPCIKHTNCSTFGLLLIQKGNATHDNVCS ; ; 57 DECVYCSPVCKELQSVKQECNRTHNRVCECEEEGRYLEIEF------CLKHRSCPPGSGY 109 17 10 YDPETGH------QLLCDKCAPGTYLKQHCTVRRKTLCVPCPDHSYTDSWHTS 56 RTCLSCSSCSTDQVETRACTKQQNRVCACEAGRYCALKTHSGSCRQCMRLSKCGPGF " YKPEPGYECQISQEYYDRKAQMCCAKCPPGQYVKHFCNKTSDTVCADCEASMYTQVWNQF 76 Conservative 30.2%; 17; Mismatches Length 459; Indels 24; Gaps : 36 ω

tumor necrosis factor receptor type 2 precursor - human kyAlternate names: 75K tumor necrosis factor receptor C;Species: Homo sapiens (man) C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999 C;Accession: A35356; A36475; A48416; A36007; A23666; B35010; I38094 R;Smith, C.A.; Davis, T.; Anderson, D.; Solam, L.; Beckmann, M.P.; Jerzy, R.; Dower, Science 248, 1019-1023, 1990 Science 248, 1019-1023, 1990 Species and unusual family of cellular a A;Reference number: A35356; MUID:90260639 A;Accession: A35356

A; Status: preliminary

A;Molecule type: mRNA A;Residues: 1-461 <SMI> A;Cross-references: GB:M32315; NID:g189185; PIDN:AAA59929.1; PID:g18:186

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J. Biol. Chem. 265, 1531-1536, 1990
A;Title: Two tumor necrosis factor-binding proteins purified from human urine. Evidence A;Reference number: A35010; MUID:90110215
A:Getession: B35010
                                                                                                                                                                                              A; Note: the list of introns is incomplete C; Superfamily: tumor necrosis factor receptor type 2; R C; Keywords: duplication; glycoprotein; receptor; transm F; 1-22/Domain: signal sequence #status predicted <SIG> F; 23-416/Product: tumor necrosis factor receptor type ?
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A;Title: Two human TNF receptors have similar A;Reference number: A48416; MUID:91370690
A;Accession: A48416
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A; Cross-references: GB:M55994; GB:M38549; NID:g339757; R; Dembic, Z.; Loetscher, H.; Gubler, U.; Pan, Y.C.; Lal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         R;Kohno, T.; Brewer, M.T.; Baker, S.L.; Schwartz, P.E.; King, M.W.; Hale, Proc. Natl. Acad. Sci. U.S.A. 87, 8331-8335, 1990
A;Title: A second tumor necrosis factor receptor gene product can shed a rank. Reference number: A36475; MUID:91045991
                                                                                 F;120-162/Domain: NGF receptor repeat homology <NG3>F;164-201/Domain: NGF receptor repeat homology <NG4>
                                                                                                                                           F;40-76/Domain: NGF receptor repeat homology <NG1>F;78-119/Domain: NGF receptor repeat homology <NG2>
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A; Residues: 1-37 < RE
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A;Title: Cloning, sequencing and partial functional characterization of the A;Reference number: 138094; MUID:95121934
A;Accession: 138094
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Status: preliminary (Nolecule type: mRNA (Nolecule type: mRNA (Nolecule: 116-140,'p',142-195,'R',197-362,'T',364-461 < NEL> (Nolecule: 116-140,'p',142-195,'R',197-362,'T',364-461 < NEL> (NEL> A;Cross-references: GB:M35857; NID:g339751; PIDN:AAA63262.1; PID:g339752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Title: Complementary DNA cloning of a receptor for tumor necrosis factor and A;Reference number: A36007; MUID:90349572
A;Accession: A36007
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                                                                                                                                                                                                                                                                                                                                                                                 A; Map position:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Molecule type: protein A; Residues: 27-31 <ENG>
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A; Title: Purification and
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Cross-references: GB:S63368; NID:g235648; PIDN:AAB19824.1; PID:g235649
A;Note: sequence extracted from NCBI backbone (NCBIN:63368, NCBIP:63371)
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A; Residues: 23-461 < DEI
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                                                                                                                                                                                                                                                                                      Superfamily: tumor necrosis factor receptor type 2; NGF receptor repeat homology
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                              262-279/Domain: transmembrane #status predicted <TMN> 280-461/Domain: intracellular #status predicted <INT>
                                                                                                                                                                                                                                                                                                                                                                                                               Cross-references: GDB:125914; OMIM:19119
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Gene: GDB:TNFR2
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193/Binding
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <RES>
   site:
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#status predicted
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Query Match

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C;Date: 30-Jun-1992 #sequence_revision 30-Jun-1992 #text_change 23-Ji 1999 C;Accession: B38634; A40254; S54816 R;Lewis, M.; Tartaglia, L.A.; Lee, A.; Bennett, G.L.; Rice, G.C.; WG:: G.H.W.; Chen, Proc. Natl. Acad. Sci. U.S.A. 88, 2830-2834, 1991 A;Title: Cloning and expression of cDNAs for two distinct murine tumor necrosis facto
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A;Title: Molecular cloning and expression of the type 1 and type A;Reference number: A40254; MUID:91246168
A;Accession: A40254
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F;40-77/Domain: NGF receptor repeat homology <NG1>
F;79-120/Domain: NGF receptor repeat homology <NG2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Cross-references: EMBL:X87128; NID:g809043; PIDN:CAA60618.1; PID:g809044 C;Superfamily: tumor necrosis factor receptor type 2; NGF receptor repeat C;Keywords: cytokine receptor; transmembrane protein F;1-22/Domain: signal sequence #status predicted <SIG>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Description: Characterization of the promoter region A;Reference number: S54816
A;Accession: S54816
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A; Residues: 1-22 <KIS>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Cross-references: GB:M60469; NID:g199827; PIDN:AAA39752.1; PID:g19982: R;Kissonerghis, M.; Fellowes, R.; Feldmann, M.; Chernajovsky, Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Reference number: A38634; MUID:91187885
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                                                                                                RTCLSCSSSCTTDQVEIRACTKQQNRVCACEAGRYCALKTHSGSCRQCMRLSKCGPGFGV 151
                                                                                                                                                 DECVYCSPVCKELQSVKQECNRTHNRVCECEEGRYLEIEF-----CLKHRSCPPGSGV----9
                                                                                                                                                                                                 YKPEPGYECQISQEYYDRKAQMCCAKCPPGQYVKHFCNKTSDTVCADCEASMYTQVWNQF
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35.2%;
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                                                                                                                                                                                                                                                  -QLLCDKCAPGTYLKQHCTVRRKTLCVPCPDHSYTDSWHTS [5
                                                                                                                                                                                                                                                                                                                                                                                                                            repeat homology <NG4>
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Pred. No. 2e-16;
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5; Mismatches 75;
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, C.I.; Cope
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A,Cross-references: GB:M83312; NID:g1553058
A;Note: sequence extracted from NCBI backbone (NCBIN:75206, NCBIP:75207)
A;Note: this translation is not annotated in GenBank entry MUSCD40A, rel
C;Comment: For an alternative splice form, see PIR:A46515
C;Superfamily: CD27 antigen; NGF receptor repeat homology
C;Keywords: alternative splicing; transmembrane protein
F;105-144/Domain: NGF receptor repeat homology <NGF>
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A; Residues: 1-305 < TOR>
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A;Title: Genomic structure and chromosomal mapping of the murine CD40 gene.
A;Reference number: A46515; MUID:93094586
A;Accession: A46515
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C:Date: 18-Jun-1993 #sequence_revision 18-Nov-1994
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J. Immunol. 148, 620-626, 1992

A;Title: Differential increase of an alternatively polyadenylated profession number: A46476; MUID:92105763
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A; Residues: 1-289 <GRI>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Species: Mus musculus (house mouse)
Date: 18-Jun-1993 #sequence_revision
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                                                                                                                                                            Local Similarity hes 57; Conserv
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                                                                                                             6 KYLHYDPETGHQLLCDKCAPGTYLKQHCTVRRKTLCVPCPDHSYTDSWHTSDEC---VYC 62
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SPYCKELQSVKQECNRTHNRVCECEEGRYL---EIEFCLKHRSCPPGSGVVQAGTPERNT 119
                                                                  QYLH-DGQ-----CCDLCQPGSRLTSHCTALEKTQCHPCDSGEFSAQWNREIRCHQHRHC
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57; Conser
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Pred. No. 1.9e-14;
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.8e-14;
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                                                                                C;Accession: I54182
R;Baens, M.; Chaffanet, M.; Cassiman, J.J.;
Genomics 16, 214-218, 1993
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                  A; Reference number: I54182; MUID: 93252381 A; Accession: I54182
                                                                                                                                                     tumor necrosis factor receptor 2-related protein - human
C;Species: Homo sapiens (man)
C;Date: 24-May-1996 #sequence_revision 24-May-1996 #text_change 17-Mar-2000
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                                                                A; Title: Construction and evaluation of a
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A;Cross-references: GDB:215268; OMIM:109535
A;Map position: 20q12-20q13.2
C;Superfamily: CD27 antigen; NGF receptor repeat homology
C;Keywords: B-cell; glycoprotein; phosphoprotein; surface antigen; transmembrane
C;Keywords: B-cell; glycoprotein; phosphoprotein; surface antigen; transmembrane
F;1-20/Domain: signal sequence #status predicted <SIG>
F;21-277/Product: B-cell activation protein CD40 #status experimental <MAT>
F;21-193/Domain: extracellular #status predicted <EXTP
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R;Braesch-Andersen, S.; Paulie, S.; Koho, H.; Nika, H.;
J. Immunol. 142, 562-567, 1989
A;Title: Biochemical characteristics and partial amino
A;Reference number: A60771; MUID:89093941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Title: A B-lymphocyte activation molecule related A; Reference number: S04460; MUID:89356608
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C;Date: 03-Jun-1993 #sequence_revision 03-Feb-1994 #text_change
C;Accession: S04460; A60771
                                                                                                                                                                                                                                                                                                                                                                                                                          F;153,180/Binding site: carbohydrate (Asn) (covalent) #status
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               B-cell activation protein CD40 precursor - N; Alternate names: B-cell surface antigen E
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                                                                                                                                                                                                    VHPEPPTACREKQYLINSQCCSLCQPGQKLVSDCTEFTETECLPCGESEFLDTWNRETHC
                                                                                                                                                                                                                                                LHYDPETG-----HQLLCDKCAPGTYLKQHCTVRRKTLCVPCPDHSYTDSWHTSD+:
TGVSDTICEPCPVGFFSNVSSAFEKCHPWTSCETKDLVVQQAGTNKTDVVC
                            TPERNTVCKKCPDGFFSGETSSKAPCIKHTNCSTFGLLLIQKGNATHDNVC
                                                                                                HQHKYCDPNLG--LRVQQKGTSETDTICTCEEGWHCTSEACESCVLHRSCSPGFGVKQIA ...45
                                                                                                                           ---VYCSPVCKELQSVKQECNRTHNRVCECEEGRYL---EIEFCLKHRSCPPGSGVVQAG 113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VCKKCPDGFFSGETSSKAPCIKHTNCSTFGLLLIQKGNATHDNVC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VCHPCPVGFFSNQSSLFEKCYPWTSCEDKNLEVLQKGTSQTNVIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EP--NQGLRVKKEGTAESDTVCTCKEGQHCTSKDCEACAQHTPCIPGFGVMEMATETTDT 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1403-1410, 1989
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                                                                                                                                                                                                                                                                                                                          Similarity
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                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Burkitt lymphoma
                                                                                                                                                                                                                                                                                                                            26.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           E.A.;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; NID:g29850; PIDN:CAA43045.1; PID:g2'v#51
S.; Koho, H.; Nika, H.; Aspenstroem, P.;
                                                                                                                                                                                                                                                                                                  Score 261; DI
Pred. No. 9e-1
23; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            human
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           acid sequence of the receptor-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  the nerve
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  186
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RESULT
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A; Title: Tumorigenic poxviruses: genomic organization A; Reference number: A43692; MUID:87321103
A; Accession: B43692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               72 protein - rabbit fibroma virus C;Species: rabbit fibroma virus, Shope C;Date: 30-Sep-1993 #sequence_revision C;Accession: B43692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: mRNA
A; Residues: 1-435 <RES>
A; Cross-references: GB:L04270;
                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                                                                           QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: DNA
A; Residues: 1-325 <UPT>
A; Cross references: GB.M17433
C; Superfamily: myxoma virus T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 멍
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Cross-references: GDB:1230195; OMIM:600979
A; Map position: 12p13.3-12p13.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Gene: GDB: LTBR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C; Genetics
                                                                                                                                                                                                                 뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C;Superfamily: myxoma virus T2 protein; NGF receptor repeat homology
F;64-105/Domain: NGF receptor repeat homology <NG2>
F;106-147/Domain: NGF receptor repeat homology <NG3>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
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Best L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ;Superfamily: tumor necrosis factor receptor type 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
                                                                                                                      protein - myxoma virus (strain Lausanne)
                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121 CKKCPDGFFSGETSSKAPCIKHTNCSTFGLLLIQKGNATHDNVCSGNRE 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   107
                                                                                                                                                                                                                                                  124 CPDGFFSGETSSKAPC
                                                                                                                                                                                                                                                                                     90
                                                                                                                                                                                                                                                                                                                     70
                                                                                                                                                                                                                                                                                                                                                                                         15 GHQ-----LLCDKCAPGTYLKQHCTVRRKTLCVPCPDHSYTDSWHTSDECVYCSPVCKEL 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     50
                                                                                                                                                                                                                                                                                                                                                        30 GHDYEKDGLCCASCHPGFYASRLCGPGSNTVCSPCEDGTFTASTNHAPACVSCRGPCTGH 89
                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Match
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CVPCKAGHFQNTSSPSARCQPHTRCENQGLVEAAPGTAQSDTTCKNPLE
                                                                                                                                                                                                             CPPHTYSDSLSPTERCGTSFNYISVGFNLYPVNETSCTT
                                                                                                                                                                                                                                                                                                                     QSVKQECNRTHNRVCECEEGRYLEIE-----FCLKHRSCPPGSGVVQAGTPERNTVCKK 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VMGLEEIAPCTSKRKTQCRCQPGMFCAAWALECTHCELLSDCPPGTEAELKDEVGKGNNH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LQSVKQ--ECNRTHNRVCECEEGRY-----LEIEFCLKHRSCPPGS-GVVQAGTPERNTV 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HYDPETGHQLLCDKCAPGTYLKQHCTVRRKTLCVPCPDHSYTDSWHTSDECVYCSPVCKE 68
                                                                                                                                                                                                                                                                                    LSESQPCDRTHDRVCNCSTGNYCLLKGQNGCRICAPQTKCPAGYG-VSGHTRAGDTLCEK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     YYEPQ--HRICCSRCPPGTYVSAKCSRIRDTVCATCAENSYNEHWNYLTICQLCRP-CDP 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        l Similarity
50; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                             22.8%;
30.3%;
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                                                  Schreiber, M.; Mcfadden,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NID: g339761; PIDN: AAA36757.1;
                                                                                                                                                                                                                                                                                                                                                                                                                              18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          25;
                                                                                                                                                                                                                                                                                                                                                                                                                                          Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 242.5; DB 2;
Pred. No. 3.8e-12;
5; Mismatches 83;
                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                fibroma viru
30-Sep-1993
                                                                                 31-Dec-1992 #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                             226; DB 2;
No. 5.9e-11
                                                                                                                                                                                                                                                -- IKHTNCSTFGLLLIQKGNATHDNV 163
            protein
              with
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            homology
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                                                                                     18-Jun-1999
                                                                                                                                                                                                                                                                                                                                                                                                                             36;
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            the
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              tumor necrosis
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           C;Species: variola virus
C;Date: 30-Sep-1993 #sequence_revision 30-Sep-1993 #text_change 08-Oct-1999
C;Accession: D36858; S46888; S32385; S35987
R;Blinov, V.M.
                                                                                                                                                                                                                            QΥ
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RESULT
D36858
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gene G4R protein - variola virus
N;Alternate names: B28R protein
                                                                                                                                                                                    Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R;Massung, R.F.; Esposito, J.J.; Liu, L.I.; Qi, J.; Utterback, Nature 366, 748-751, 1993
A;Title: Potential virulence determinants in terminal regions A;Reference number: Z20488; MUID:94088747
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                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Residues: 1-348 <M
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             F;106-147/Domain: NGF receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C; Keywords: glycoprotein F;64-105/Domain: NGF receptor repeat homology <NG2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Cross-references: GB:M95181; C;Superfamily: myxoma virus T2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: DNA
A; Residues: 1-326 <UPT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Reference number: A40566; A; Accession: A40566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Status: preliminary; translated from GB/EMBL/DDBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Species: variola major virus;Date: 22-Oct-1999 #sequence_revision 22-Oct-1999
                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Accession:
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                                                                                                                                                                                                                                                                                                                                 Matches
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                                                                                                               143
                                                                                                                                                  115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     157 AVSSTETCTSSFNYISVEFNLYPVNDTSCTT 187
                                                                                                                                                                                    84
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                             SVGDVICSPCGFGTYSHTVSSADKCEPVPN-NTFNYIDVE
                                                                                                                                                PERNTYCKKCPDGFFSGETSSKAPCIKHTNCSTFGLLLIQ
                                                                                                                                                                           SCNGRCNSNQVETRSCNTTHNRICECSPGYYCLLKGSSGCKACVSQTKCGIGYG-VSGHT | | 12
                                                                                                                                                                                                                    YCSPVCKELQSVKQECNRTHNRVCECEEGRYLEI - - - - - EFCLKHRSCPPGSGVVQAGT 114
                                                                                                                                                                                                                                                        YTPPNGKCKDTEYKRHNLCCLSCPPGTYASRLCDSKTNTQCTPCGSGTFTSRNNHLPACL 83
                                                                                                                                                                                                                                                                                              YDPETG---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KTRDRVCDCSAGNYCLLKGQEGCRICAPKTKCPAGYG-VSGHTRTGDVLCTKCPRYTYSI, 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RTHNRVCECEEGRYLEIE-----FCLKHRSCPPGSGVVQAGTPERNTVCKKCPDGFFSG 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LCCTSCPPGSYASRLCGPGSDTVCSPCKNETFTASTNHAPACVSCRGRCTGHLSESQSCD
                                                                                                                                                                                                                                                                                                                                 48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1-348 <MAS>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 Similarity
45; Conser
                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                          --HQLLCDKCAPGTYLKQHCTVRRKTLCVPCPDHSYTDSWHTSDECV 60
                                                                                                                                                                                                                                                                                                                                               21.2%;
30.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21.2%; 29.8%;
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                                                                                                                                                                                                                                                                                                                                                                                                                      protein; NGF receptor repeat homology
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GB:M37976; NID:g332309; PIDN:AAA46632 | PID:g332310
                                                                                                                                                                                                                                                                                                                                 19;
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                                                                                                                                                                                                                                                                                                                                                Score 210.5; DB Pred. No. 1e-09;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 211; DB 1
Pred. No. 9e-10;
0; Mismatches
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                                                                                                                                                                                                                                                                                                                                 Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             virus
                                                                                                                                                                                                                                                                                                                                                                                                                                                            PIDN: AAA60933.1;
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                                                                                                             181
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                                                                                                                                                                                                                                                                                                                               17;
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A; Accession: D72175
A; Status: preliminary
A; Molecule type: DNA
A; Residues: 1-349 <SHC>
A; Cross references: GB: Y16780; N
A; Cxpest mental source: strain Ga
C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DЪ
A; Gene: G2R
C; Superfamily:
                                                                                                                                                                                                                        R:Shchelkunov, S.N.; Totmenin, A.V.; Gutorov, V.V.; Safronov, P.F.; Massung, R.F.; submitted to GenBank, March 1998
A;Description: Analysis of the complete coding sequence of DNA of alastrim variola A;Reference number: A72150
                                                                                                                                                                                                                                                                                                                            C; Species: variola minor virus
C; Date: 24-Nov-1999 #sequence_0
C; Accession: D72175
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C;Superfamily: myxoma virus T2 protein; NGF receptor F;32-66/Domain: NGF receptor repeat homology <NGF>
F;68-109/Domain: NGF receptor repeat homology <NGC2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A:Cross-references: GB:X69198; NID:9456758; PIDN:CAA49137.1; PID:9457087
A:Experimental source: strain India-1967, ssp. major, isolate Ind3
R:KOJYkhalov, A.A.; Bilnov, V.M.; Gytorov, V.V.; Pozdnyakov, S.G.; Chizh submitted to the EMBL Data Library, April 1992
A:Description: Nucleotide sequence analysis of the region of variola vir
                                                                                                                                                                                                                                                                                                                                                                                                     G2R protein - variola minor virus (strain Garcia-1966)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     F; 68-109/Domain: 1
F; 110-151/Domain:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Experimental source: strain C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A:Molecule type: DNA
A:Residues: 31-168 <SHC>
A:Cross-references: EMBL:X69198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEBS Lett. 319, 80-83, 1993
A; Title: Genes of variola and vaccinia viruses necessary to
A; Reference number: S32385; MUID:93202281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Cross-references: EMBL:X67117; NID:g516428; PIDN:CAA47540.1; A;Experimental source: strain India-1967, isolate Ind3 R;Shchekunov, S.N.; Blinov, V.M.; Sandakhchiev, L.S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Description: not shown. A;Reference number: A36859 A;Accession: D36858
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A; Residues: 1-349 <B
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Molecule type: DNA
Residues: 1-349 <KOL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Accession: S46888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Reference number: S46868
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                                                                                                                                                                                                                                                                                                                                              24-Nov-1999 #sequence_revision 24-Nov-1999 #text_change 20-Jun-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SVGDVICSPCGFGTYSHTVSSADKCEPVPN-NTFNYIDVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     YCSPVCKELQSVKQECNRTHNRVCECEEGRYLEI-----EFCLKHRSCPPGSGVVQAGT 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       YTPPNGKCKDTEYKRHNLCCLSCPPGTYASRLCDSKTNTQCTPCGSGTFTSRNNHLPACL 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SCNGRCNSNQVETRSCNTTHNRICECSPGYYCLLKGSSGCKACVSQTKCGIGYG-VSGHT
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     myxoma virus
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               21.2%;
T2 protein;
                                                                           ; NID:g5830555;
Garcia-1966
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 210.5; DB
Pred. No. 1e-09;
9; Mismatches
     NGF
  receptor repeat homology
                                                                                                PIDN:CAB54798.1;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S.G.; Chizhikov, V.E.;
                                                                                                PID:g5830759
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monomer; phosphoprotein;

receptor

experimental

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C:Superfamily: nerve yaven...

C:Keywords: duplication; glycoprotein; heterodimer; mou

C:Keywords: duplication; m
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                                                                                                                                                                                                                              A; Map position: 17q21-17q22
C; Superfamily: nerve growth factor receptor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Molecule type: protein
A; Residues: 183-208 < VIS>
R: Sehgal, A.; Patil, N.; Chao, M.
Mol. Cell. Biol. 8, 3160-3167, 1988
A; Title: A constitutive promoter directs expression of A; Reference number: 157638; MUID:89096903
A; Accession: 157638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: DNA
A; Residues: 1-22 < RES>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                 A;Cross-references: GDB:120234; OMIM:162010
                                                                                                                                                                                                                                                                                                                                                        A; Gene: GDB: NGFR
                                                                                                                                                                                                                                                                                                                                                                                                        C; Genetics:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Note: this sequence has been corrected by a note added in proof to tollow the R;Vissavajjhala, P.; Leszyk, J.D.; Lin-Goerke, J.; Ross, A.H. Arch. Biochem. Biophys. 294, 244-252, 1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Accession: A60204
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Title: Expression and structure of the human A; Reference number: A25218; MUID:87051725
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   preliminary;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SVGDVICSPCGFGTYSYTVSSTDKCEPVPN-NTFNYIDVE 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            YCSPVCKELQSVKQECNRTHNRVCECEEGRYLEI-----EFCLKHRSCPPGSGVVQAG: 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           YTPPNGKCKDTEYKRHNLCCLSCPPGTYASRLCDSKTNTQCTPCGSGTFTSRNNHLPA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Lanahan, A.; Buck,
54, 1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sapiens (man
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19;
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The Parties of Street or other

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A; Rolecus type: mRNA
A; Molecule type: mRNA
A; Residues: 1-425 < RAD>
A; Residues: 1-425 < RAD>
A; Cross-references: GB: X05137; NID: g56755; PIDN: CAA28783.1; PID: g56756
A; Cross-references: GB: X05137; NID: g56755; PIDN: CAA28783.1; PID: g56756
A; Cross-references: GB: X05137; NID: g56755; PIDN: CAA28783.1; PID: g56756
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A; Cross-references: GB: X05137; NID: g56755; PIDN: CAA28783.1; PID: g56756
A; Cross-references: GB: X05137; NID: g56755; PIDN: CAA28783.1; PID: g56756
A; Cross-references: GB: X05137; NID: g56755; PIDN: CAA28783.1; PID: g56756
A; Cross-references: GB: X05137; NID: g56755; PIDN: CAA28783.1; PID: g56756
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A; Cross-references: GB: X05137; NID: g56755; PIDN: CAA28783.1; PID: g56756
A; Cross-references: GB: X05137; NID: g56755; PIDN: CAA28783.1; PID: g56756
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A; Cross-references: GB: X05137; NID: g56755; PIDN: CAA28783.1; PID: g56756
A; Cross-references: GB: X05137; NID: g56755; PIDN: CAA28783.1; PID: g56756
A; Cross-references: GB: X05137; NID: g56755; PIDN: CAA28783.1; PID: g56756
A; Cross-references: GB: X05137; NID: g56755; PIDN: CAA28783.1; PID: g56756
A; Cross-references: GB: X05137; NID: g56755; PIDN: CAA28783.1; PID: g56756
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A; Cross-references: GB: X05137; NID: g56755; PIDN: CAA28783.1; PID: g56756
A; Cross-references: GB: X05137; PID: g56755; PIDN: CAA28783.1; PID: g56756
A; Cross-references: GB: X05137; PID: g56756; PIDN: CAA28783.1; PID: g56756; PID: 
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C;Species: Rattus norvegicus (Norway rat)
C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999
C;Accession: A26431; PH1229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        F;67-108/Domain: NGF receptor repeat homology <NG3>
F;109-147/Domain: NGF receptor repeat homology <NG3>
F;149-189/Domain: NGF receptor repeat homology <NG4>
F;149-189/Domain: NGF receptor repeat homology <NG4>
F;149-248/Region: serine/threonine-rich
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C;Comment: This receptor is found on sensory and sympathetic neurons, on neuroblastoma C;Comment: The cysteine-rich region of the extracellular domain may form part or all of C;Comment: This protein is thought to form a high-affinity receptor when it associates
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Title: Regulatory elements and transcriptional regulation by testosterone and retinoica; Reference number: PH1229; MUID:93077038
A;Accession: PH1229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Title: Gene transfer and molecular cloning of the rat nerve growth factor receptor. A;Reference number: A26431; MUID:87115859 A;Accession: A26431
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A; Residues: 1-20 <MET>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R;Radeke, M.J.; Misko, T.I
Nature 325, 593-597, 1987
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Cross-references: GB:X61269
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273-427/Domain: intracellular #status predicted <INT>
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        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Keywords: duplication; glycoprotein; heterodimer;
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                                                   Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity
les 45; Conser
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CKACNLGEGVAQPCGA-NQTVCEPCLDSVTFSDVVSATEPCKPCTE-CVGLQSMSAPCVE 101
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      THNRVCECEEGRYLE----IEFCLKHRSCPPGSGVVQAGTPERNTVCKKCPDGFFSGET 133
        Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           19.48;
                                              19.0%;
33.3%;
        23;
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Score 188.5; DB:
Pred. No. 6.7e-08
3; Mismatches 5
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Pred. No. 3.2e-08;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        monomer;
                                                                                 Length 425;
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        Gaps
    4
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A; Molecule type: mRNA
A; Molecule type: mRNA
A; Residues: 21-35, 'Y', 37-172, 'K', 174-275, 'S', 277-395, 'R', 397-416 < HEU >
A; Residues: 21-35, 'Y', 37-172, 'K', 174-275, 'S', 277-395, 'R', 397-416 < HEU >
C; Comment: This receptor is found on sensory and sympathetic neurons. On neuroblastom C; Comment: This protein is thought to form a high-affinity receptor when it associate C; Superfamily: nerve growth factor receptor; NGF receptor repeat homology C; Keywords: duplication; glycoprotein; heterodimer; monomer; phosphoprotein; receptor F; 1-20/Domain: signal sequence #status predicted < SIG>
F; 1-20/Domain: signal sequence #status predicted < SIG>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Experimental source: embryonic chick brain R;Heuer, J.G.; Fatemie-Nainie, S.; Wheeler, E.F.; Bothwell, M. Dev. Biol. 137, 287-304, 1990
A;Title: Structure and developmental expression of the chicken A;Reference number: A60504; MUID:90152140
A;Accession: A60504
                                                        Qy
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F;240-261/Domain: transmembrane #status predicted <NEM>F;262-416/Domain: intracellular #status predicted <INT>F;52/Binding site: carbohydrate (Asn) (covalent) #status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           F;21-416/Product: nerve growth factor receptor #status F;21-239/Domain: extracellular #status predicted <EXT> F;24-57/Domain: NGF receptor repeat homology <NG1> F;59-100/Domain: NGF receptor repeat homology <NG2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R;Large, T.H.; Weskamp, G.; Helder, J.C.; Radeke, M.J.; Misko, T.P.; Shooter, E.M.; R Neuron 2, 1123-1134, 1989
A;Title: Structure and developmental expression of the nerve growth 1.1 Lor receptor i A;Reference number: JN0006; MUID:90166579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C;Species: Gallus gallus (chicken)
C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999
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A; Residues: 1-416 <LAR>
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Best Local
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                                                                                                                       94
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VDPCLPCTICEE-NEVMVKECTATSDAEC
                                                        KAPCIKHTNCSTFGLLLIQKGNATHDNVC
                                                                                                                       SDDAVCRCAYG-YFQDELSGSCKECSICEVGFGLMFPCRDSQDTVCEECPEGTFSDEANF
                                                                                                                                                                               THNRVCECEEGRYLEIEF --- CLKHRSCPPGSGVVQAGTPERNTVCKKCPDGFFSGETSS 135
                                                                                                                                                                                                                                              CKACNLGEGVVQPCGV-NQTVCEPCLDSVTYSDTVSATEPCKPCTQ-CVGLHSMSAPCVE
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Copyright (c) 1993 - 2000 Comp
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Mutated OCIF, OCIF
Human FTHMA-070 pa
Mutated OCIF, OCIF
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20	20	20	19	19	20	20	17	17	17	17	17	17	17	17	21	17	17	19	17	21	20	20	20	19	18	17	17	17	17	17	19	17
Y17479	Y42182	Y03099	W63622	W66102	Y42184	Y28449	R99947	R99930	R99929	R99937	R99946	R99939	R99938	R99936	Y77464	R99950	R99935	W57635	R99933	Y43400	W83926	W95030	Y05742	W53239	W38345	R99931	R99925	R99934	R99932	R99942	W57636	R99948
Mammalian tumour n	FLINE	lui . EN	Human tun 'r necro	Amino acti sequenc	Human mflik: #1 pr	A human this his nec	Mutated ('IF, OCIF	Osteoclas: Genesis	Osteoclar Jamesis	~	CHP.	OCTE.	CCIF,	Mutated CYIF, OCIF	Primate protein se	· . :: ,	ted (· · · ,	gi iring	Mutated (*:11, OCIF	7	70	Sison	Tumour not is fa	~;	Human ost perotege	Mutated of TF, OCIF	ngth os	CCLE,	Œ,	F		Mutated Pr. OCI

ALIGNMENTS

7

RESULT W38344 ID W3 Osteoprotegerin; antibody; diagnosis; affinity purification; recombinant production; transgenic animal; treatment; preventic antisense oligonucleotide; probe; detection: screening; mouse; bone disease; osteoporosis; Paget's disease: hypercalcaemia; hyperparathyrodism; rheumatoid arthritis; osteomyelitis; osteolytic metastasis; periodontal bone loss; bone necrosis; osteopaenia; murine. 03-SEP-1996; 22-DEC-1995; CDS (AMGE-) AMGEN INC. W38344; W38344 standard; Protein; 401 AA 26-JUN-1997. DE19654610-A1. Mus sp. Mouse osteoprotegerin. 20-APR-1998 20-DEC-1996; (first entry) 96US-0706945 95US-0577788 96DE-1054610 Location/Qualifiers 90..1295 /product- osteoprotegerin /*tag= - .

Mature osteoclasto Human tumour necro

genome

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RESULT
W38343
ID W3
XX
AC W3
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Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches 173;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   be used to regulate the level of OPG in mammals, specifically to increase OPG levels, however the use of antisense sequences is also contemplated. Fragments of the CDNA can be used as probes detect OPG expressing cells and tissue, and to screen cDNA libraries for related sequences. OPG can be used to treat or prevent bone diseases, specifically excessive bone loss, e.g. osteoporosis, Paget's disease, hypercalcaemia, hyperparathyroidism, rheumatoid arthritis, osteomyelitis, osteolytic metastases, periodontal bone loss, bone necrosis and
03-SEP-1996;
                                                                                          DE19654610-A1
                                                                                                                                                                                Rat; osteoprotegerin; antibody; diagnosis; affinity purification; recombinant production; transgenic animal; treatment; prevention; antisense oligonucleotide; probe; detection; screening; bone disease; osteoporosis; Paget's disease; hypercalcaemia; hyperparathyroidism; rheumatoid arthritis; osteomyelitis;
                            20-DEC-1996;
                                                            26-JUN-1997.
                                                                                                                                                       osteopaenia
                                                                                                                                                                  hyperparathyroidism; rheumatoid arthritiosteolytic metastasis; periodontal bone
                                                                                                                                                                                                                                                                                                         20-APR-1998 (first entry)
                                                                                                                                                                                                                                                                                                                                                                       W38343 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The present sequence is mouse osteoprotegerin (OPG). Anti-OPG antibodies can be used in OPG diagnostic assays, and as affinity purification materials. The OPG cDNA can be used to express recombinant OPG and to generate transgenic animals. It can also
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Nucleic acid encoding osteoprotegerin - diseases involving excessive bone loss,
                                                                                                                        Rattus
                                                                                                                                                                                                                                                                            Rat osteoprotegerin.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                   142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121 CKKCPDGFFSGETSSKAPCIKHTNCSTFGLLLIQKGNATHDNVCSGNREATQK 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              82
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                                                                                                                                                                                                                                                                                                                                                                                                                                               ETLPPKYLHYDPETGHQLLCDKCAPGTYLKQHCTVRRKTLCVPCPDHSYTDSWHTSDECV 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      etlppkylhydpetghqllcdkcapgtylkqhctvrrktlcvpcpdhsytdswhtsdecv 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ycspvckelqsvkqecnrthnrvceceegryleiefclkhrscppgsgvvqagtperntv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         23;
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                              96DE-1054610
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                                                                                                                                                                                                                                                                                                                                                                       Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Lacey DL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       182pp;
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Pred. No. 6.4e-79;
; Mismatches 0;
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RESULT
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Best Local
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                       W09626217-A1
                                                              Protein
                                                                                                    Key
                                                                                                                           Synthetic.
                                                                                                                                                     osteoporosis
                                                                                                                                                                 Osteoclastogenesis inhibitory
                                                                                                                                                                                           Mutated OCIF, OCIF-CDD1
                                                                                                                                                                                                                                             R99945
                                                                                                                                                                                                                                                                     R99945 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       osteolytic metastases, periodontal bone loss, bone necrosis and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nucleic acid encoding osteoprotegerin - useful for treatment diseases involving excessive bone loss, e.g. osteoporosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 1997-334271/31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Boyle WJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           22-DEC-1995;
                                                                                      Peptide
                                                                                                                                                                                                                    23-APR-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 23;
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                                                                                                                                                                                                                                                                                                                                     142
                                                                                                                                                                                                                                                                                                                                                           121 CKKCPDGFFSGETSSKAPCIKHTNCSTFGLLLIQKGNATHDNVCSGNREATQ 172
                                                                                                                                                                                                                                                                                                                                                                                      82
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                                                                                                                                                                                                                                                                                              ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            present sequence is rat osteoprotegerin (OPG).
                                                                                                                                                                                                                                                                                                                                   ckrcpdgffsgetsskapcrkhtncsslgllligkgnathdnvcsgnreatg
                                                                                                                                                                                                                                                                                                                                                                            ycspvckelqtvkqecnrthnrvceceegrylelefclkhrscppglgvlqagtpern: 141
                                                                                                                                                                                                                                                                                                                                                                                                YCSPYCKELQSYKQECNRTHNRYCECEEGRYLEIEFCLKHRSCPPGSGYYQAGTPERN. V-120
                                                                                                                                                                                                                                                                                                                                                                                                                                     etfppkylhydpetgrqllcdkcapgtylkqhctvrrktlcvpcpdysytdswhtsdec
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ETLPPKYLHYDPETGHQLLCDKCAPGTYLKQHCTVRRKTLCVPCPDHSYTDSWHTSDE;v
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         161;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity 93.6
61; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      T96061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pages 102-104; 182pp; German
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .401
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                                                                                                                                                                                                                  (first entry)
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                                                           /note= "Signal
22..197
                                                 /note= "Mature OCIF-CDD1"
                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                      Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     94.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Lacey
                                                                                                                                                                                                                                                                      197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 936; DB 18;
Pred. No. 5.8e-74;
6; Mismatches 5,
                                                                                                                                                                factor; OCIF; heparin; bone
                                                                                                                                                                                                                                                                      A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DL,
                                                                          peptide"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Anti-OPG
                                                                                                                                                                 resort ' P'n;
                                                                                                                                                                                                                                                                                                                                     193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0,
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29-AUG-1996

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RESULT
R99944
ID R9
AC R9
AC R9
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Best Local S
Matches 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This sequence represents a mutated version of the full length osteoclastogenesis inhibitory factor (OCIF) of the invention. This sequence represents OCIF-CDD1 in which amino acids 177-380 of the mature OCIF protein are deleted. The OCIF of the invention has a molecular weight by SDS-PAGE of 60 kD under reducing conditions and 120 kD under non-reducing conditions. The protein is adsorbed onto cation-exchangers or heparin and its activity is lowered after 10 mins at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90 deg.C. OCIF is useful in the control of bone resorption and therefore
  W09626217-A1
                                                                                                                                                                 Synthetic
                                                                                                                                                                                                          osteoporosis
                                                                                                                                                                                                                           Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption;
                                                                                                                                                                                                                                                                    Mutated OCIF,
                                                              Protein
                                                                                                                                                                                                                                                                                                               23-APR-1997
                                                                                                                                                                                                                                                                                                                                                        R99944;
                                                                                                                                                                                                                                                                                                                                                                                             R99944 standard; Protein; 272
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 71; Page 123; 183pp; Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA encoding osteoclastogenesis inhibitory factor protein - useful for bone resorption control, esp. treatment of osteoporosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Goto M, Higashio K,
Nakagawa N, Shima N,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21-JUL-1995;
20-FEB-1995;
                                                                                                     Peptide
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mes 151; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 ETLPPKYLHYDPETGHQLLCDKCAPGTYLKQHCTVRRKTLCVPCPDHSYTDSWHTSDECV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                the treatment and prevention of disorders of bone resorption, e.g.
                                                                                                                                                                                                                                                                                                                                                                                                                                      4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     YCSPYCKELQSYKQECNRTHNRYCECEEGRYLEIEFCLKHRSCPPGSGYVQAGTPERNTY 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1996-402320/40
DB; T33175.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             y cspvckelqyvkqecnrthnrvceckegryleie fclkhrscppgfgvvqagtperntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntverselferntver
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                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                    OCIF-CDD2
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95JP-0054977
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                                      /note=
22..272
/note=
                                                                                                       Location/Qualifiers
1..21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    89.3%;
87.3%;
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Tsuda E,
                                                                             "Signal peptide"
                                        "Mature OCIF-CDD2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 887; DB 17;
Pred. No. 4.9e-70;
                                                                                                                                                                                                                                                                                                                                                                                             A
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a M, Yano K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 197;
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Yasuda H;
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                      Protein
                                                                                                                               Synthetic
                                                                                                                                                                        osteoporosis
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N, Shima N,
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87.3%;
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Tsuda E,
"Mature OCIF-CSph"
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Pred. No. 6.9e-70;
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Ueda M, Yano
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Yasuda H;
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                                                      Synthetic.
                                                                                           Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption; osteoporosis.
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Peptide
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N-PSDB; T33179.
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Nakagawa N, Shima
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20-FEB-1995;
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87.3%;
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Tsuda E, Ue
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da M, Yano K,
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Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resor; i :: osteoporosis.
                                                         Mutated OCIF,
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N, Shima N,
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198..199
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Tsuda E, Ue
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Pred. No. 8.4e-70;
7; Mismatches 15;
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Ueda M, Yano
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Yasuda H;
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Human FTHMA-070 partial polypeptide
                                                                                                                                                                                                                                                                                                                                                                        and 120 kD under non-reducing conditions. The protein is adsorbed onto cation-exchangers or heparin and its activity is lowered after 10 mins at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90 deg.C. OCIF is useful in the control of bone resorption and therefore
                         01-MAR-1999
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                                                W83928
                                                                      W83928 standard;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DNA encoding osteoclastogenesis inhibitory factor protein
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20-FEB-1995;
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                                                                                                                                                                                                                                                                                                                                                              the treatment and prevention of disorders of bone resorption, e.g.
                                                                                                                                                                      ETLPPKYLHYDPETGHQLLCDKCAPGTYLKQHCTVRRKTLCVPCPDHSYTDSWHTSDECV 60
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DB; T33171.
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N, Shima N,
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                        (first entry)
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95JP-0054977
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273..274
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1..21
                                                                      Protein;
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Tsuda E, Ueda
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Pred. No. 8.4e-70;
7; Mismatches 15,
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a M, Yano K,
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Yasuda H;
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Best Local :
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       polypeptide, deduced from a partial cDNA (see V69279). Full-lengt FTHMA-070 (see W83926) is claimed. It is a novel protein havin; homology to tumour necrosis factor receptor FTHMA-070 nucleic acids and polypeptides of the invention are useful as modulating agents in regulating a variety of cellular processes. They can be used for identifying compounds which bind to or modulate the activity of the polypeptides (claimed). They can also be used in screening assays, detection assays (e.g. chromosomal mapping, tissue twing after the billowy) predictive medicine (per chromosomal mapping).
Osteoclastogenesis inhibitory factor; OCIF; heparin; bone osteoporosis.
                                                                                                                                                                                                                                                                     R99943 standard; Protein; 351
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                                                                                         Mutated
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18-APR-1997;
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7; Mismatches
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Pred. No. 9e-70;
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Matches 15
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        Mature osteoclastogenesis inhibitory factor
                            22-APR-1997
                                             R99924;
                                                             R99924 standard;
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                                                                                                                                                                                                                                                                                                                                                                                                         DNA encoding osteoclastogenesis inhibitory factor protein - for bone resorption control, esp. treatment of osteoporosis
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Nakagawa N, Shima
                                                                                                                                                                                                                                                               Sequence
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20-FEB-1995;
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22..351
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Tsuda E,
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Pred. No. 9.1e-70;
7; Mismatches 15;
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Yasuda H;
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                  differentiation;
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                                  Tumour necrosis facor; TNF; receptor; TNF-beta; ligand; tumour:
                                                                        Human tumour
                                                                                                          05-MAY-1997
                                                                                                                                              R99357;
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20-FEB-1995;
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51; Conservative
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1 N, Shima
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         resorption
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                380
                                                                        necrosis
                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BRAND MILK PROD CO
on; immune response; autoimmune disease;
graft-versus-host; apoptosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    95JP-0207508.
95JP-0054977.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        96WO-JP00374
                                                                                                                                                                               Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Z,Z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         control,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           89.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         183pp;
                                                                        factor receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Kobayashi
Tsuda E,
                                                                                                                                                                             390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 887; DB 17;
Pred. No. 9.9e-70;
7; Mismatches 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        esp. treatment
                                                                                                                                                                               A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'EJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LTD.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mochizuki
a M, Yano
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         factor protein -
t of osteoporosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Morinaga
Yasuda H;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                     inflamma†
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               380;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
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RESULT 12
W53238
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches 151;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The receptor binds to TNF, and in particular, TNF-beta. The receptor may be used for screening for antagonists may be used for ligands for the receptor. Such agonists may be used to inhibit the growth of tumours, to stimulate cellular differentiation, to mediate the immune response and anti-viral response, to regulate growth and provide resistance to certain infections. The antagonists may be used therapeutically, to treat autoimmune diseases, inflamation, septic shock, to inhibit graft-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 19
N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Key
Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New human tumour necrosis factor receptor - used to develop prods for treating e.g. tumours, infection, auto:immune disease, graft rejection, cytotoxicity or inflammation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15-MAR-1995;
29-MAR-1995;
            WO9807840-A1
                                                                                                      Human OCIF genome DNA-2 protein.
                                                                                                                                                                                     W53238 standard; Protein; 391 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 14; Fig 1; 59pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Fleischmann RD,
                                     Homo sapiens
                                                                rheumatism;
                                                                             Human;
                                                                                                                                15-JUL-1998 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                versus-host reactions, and to prevent apoptosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (HUMA-) HUMAN GENOME SCI INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15-MAR-1995;
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                                                                                                                                                                                                                                                         142
                                                                                                                                                                                                                                                                 121 CKKCPDGFFSGETSSKAPCIKHTNCSTFGLLLIQKGNATHDNVCSGNREATQK 173
                                                                                                                                                                                                                                                                                                             82
                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                 22
                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
                                                                                                                                                                                                                                                                                                                                                                                          1 ETLPPKYLHYDPETGHQLLCDKCAPGTYLKQHCTVRRKTLCVPCPDHSYTDSWHTSDECV 60
                                                                                                                                                                                                                                                                                                                        YCSPVCKELQSVKQECNRTHNRVCECEEGRYLEIEFCLKHRSCPPGSGVVQAGTPERNTV 120
                                                                                                                                                                                                                                                                                                          ycspvckelqyvkqecnrthnrvceckegryleiefclkhrscppgfgvvqagtperntv
                                                                                                                                                                                                                                                                                                                                                               etfppkylhydeetshqllcdkcppgtylkqhctakwktvcapcpdhyytdswhtsdecl 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1996-433821/43.
DB; T35475.
                                                                                                                                                                                                                                                   {\tt ckrcpdgffsnetsskapcrkhtncsvfgllltqkgnathdnicsgnsestqk}
                                                                                                                                                                                                                                                                                                                                                                               OCIF;
                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                             ; genome; multiple
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          390 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             95WO-US03216.
95ZA-0002587.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Greene JM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /label= sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                 89.3%;
87.3%;
                                                                osteoclast; antipyretic; osteoporosis; sclerosis.
                                                                                                                                                                                                                                                                                                                                                                                                                      7;
                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 887; DB 1
Pred. No. 1e-69;
                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 17;
                                                                                                                                                                                                                                                                                                                                                                                                                      15;
                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 390;
                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                     0;
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                                                                                                                                                                                                                                  R99948
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (i) MW determined by SDS-PAGE of approximately 60 kDa under reducing conditions, and 60 kDa and 120 kDa under non-reducing conditions; (ii) 401 as sequence (III) (see W53239); (iii) affinity to cation exclusioners and heparin; (iv) its osteoclast formation inhibiting activity reduced by heating at 70 degrees Celsius for 10 minutes or 56 degrees Celsius for 30 minutes, and (v) its antipyretic activity reduced by heating at 90 degrees Celsius for 10 minutes, and (2) a method for preparing the above proteins The proteins are useful for, e.g. treatment and prevention of osteoporosis, rheumatism or multiple sclerosis, and also as antigens for immunological diagnosis of these diseases and disorders.
                          Peptide
                                           Key
                                                                                             osteoporosis
                                                                                                                                   Mutated
                                                                                                                                                                                        R99948;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            which is shown in the present invention. The present invention describes: (1) a method of inhibiting the formation of osteoclasts and/or antipyretic proteins, which have the following characteristics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Inhibition of osteoclast formation and/or antipyretic activity useful for, e.g. treating osteoporosis, rheumatism and multiple
                                                                   Synthetic
                                                                                                          Osteoclastogenesis inhibitory factor; OCIF; heparin;
                                                                                                                                                               23-APR-1997
                                                                                                                                                                                                                   R99948 standard; Protein; 393 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sclerosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Morinaga T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (SNOW ) SNOW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   19-AUG-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               26-FEB-1998
                                                                                                                                                                                                                                                                                   121 CKKCPDGFFSGETSSKAPCIKHTNCSTFGLLLIQKGNATHDNVCSGNREATQK 173
                                                                                                                                                                                                                                                                                                                                        72
                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                             12
                                                                                                                                                                                                                                                                                                                                                                                        13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    present sequence represents human OCIF genome DNA protein ch is shown in the present invention. The present invention
                                                                                                                                                                                                                                                                                                                                                                   YCSPVCKELQSVKQECNRTHNRVCECEEGRYLEIEFCLKHRSCPPGSGVVQAGTPERNFV 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1998-169150/15
                                                                                                                                                                                                                                                                                                                                                                                                                                                 151;
                                                                                                                                                                                                                                                                                                                                     ycspvckelqyvkqecnrthnrvceckegryleiefclkhrscppgfgvvqagtpernt
                                                                                                                                                                                                                                                                                                                                                     OCIF,
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              V20767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Page 16-26; 36pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BRAND MILK PROD CO LTD
                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Nakagawa
                                                                                                                                    OCIF-CBst
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ÃĂ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   97WO-JP02859
/note= "Signal peptide" 22..393
                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                               89.3%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 887; DB 1 Pred. No. 1e-69; 7; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 391;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                          bone resorption;
                                                                                                                                                                                                                                     7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
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Protein

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                                                                                                                                                                 RESULT 14
W57636
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                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                      Matches 151;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This sequence represents a mutated version of the full length osteoclastogenesis inhibitory factor (OCIF) of the invention. This sequence represents OCIF-CBst in which Gln 371 is substituted by sequence represents OCIF-CBst in which Gln 371 is substituted by Leu and amino acids 373-380 of the mature OCIF protein are deleted. These changes are caused by the introduction of a restriction site in the DNA encoding this protein. The OCIF of the invention has a molecular weight by SDS-PAGE of 60 kD under reducing conditions and 120 kD under non-reducing conditions. The protein is adsorbed onto cation-exchangers or heparin and its activity is lowered after 10 mins at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90 deg.C. OCIF is useful in the control of bone resorption and therefore in the treatment and prevention of disorders of bone resorption, e.g.
TR1 receptor; tumour necrosis factor receptor-1; TNF-alpha; TNF-beta; inhibitor; tumour growth; tumour necrosis; microorganism infection; cellular differentiation stimulation; ionising radiation; septic shoc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Misc-difference
                                                                                           27-AUG-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 80;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA encoding osteoclastogenesis inhibitory factor protein for bone resorption control, esp. treatment of osteoporosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21-JUL-1995;
20-FEB-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO9626217-A1
                                                           Modified TR1 receptor protein.
                                                                                                                                                   W57636 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 1996-402320/40
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Nakagawa N, Shima N,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (SNOW ) SNOW BRAND MILK PROD CO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20-FEB-1996;
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                                                                                                                                                                                                                       82
                                                                                                                                                                                                                                                                                                  61 YCSPVCKELQSVKQECNRTHNRVCECEEGRYLEIEFCLKHRSCPPGSGVVQAGTPERNTV 120
                                                                                                                                                                                                                                                                                                                                           μ
                                                                                                                                                                                                                                                                                   ycspvckelqyvkqecnrthnrvceckegryleiefclkhrscppgfgvvqagtperntv
                                                                                                                                                                                                                                                                                                                                                                        ETLPPKYLHYDPETGHQLLCDKCAPGTYLKQHCTVRRKTLCVPCPDHSYTDSWHTSDECV
                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             393
                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             126-128; 183pp; Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     95JP-0207508.
95JP-0054977.
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392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /label= Gln371Leu
                                                                                                                                                   Protein; 395
                                                                                                                                                                                                                                                                                                                                                                                                                 89.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Kobayashi F,
Tsuda E, Ue
                                                                                                                                                                                                                                                                                                                                                                                                   Score 887; DB 1 pred. No. 1e-69; 7; Mismatches
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la M, Yano
                                                                                                                                                                                                                                                                                                                                                                                                                                DB 17;
                                                                                                                                                                                                                                                                                                                                                                                                      15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ×ω
   radiation; septic shock;
                                                                                                                                                                                                                                                                                                                                                                                                                              Length 393;
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Yasuda H;
                                                                                                                                                                                                                                                                                                                                                                                                      Indels
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                                                                                                                                                                                                                                                                                                                                            81
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ĬD R99942 RESULT

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194

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R99942 standard; Protein; 399

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CC of the invention. The DNA can be used to produce a recombinant has a construction. The DNA can be used to produce a recombinant has a construction of the DNA can be used to transfect the construction of the TRI receptor can bind both TNF-alpha and TNF-beta. TRI concerns of tumours. They can also be used to stimulate cellular concerns of tumours. They can also be used to stimulate cellular concerns of tumours. They can also be used to stimulate cellular concerns of tumours and prevent related disease. The agonists may be used to augment TRI's role in the host. They can also be used to augment TRI's role in the host. They can also be used to stimulate cellular concerns and prevent related disease. The agonists may concern the control of the stimular produced during a course of radiotherapy, e.g. denaturation of control of the stimular response and to treat immunodeficiencies related to diseases coused to mediate an anti-viral response, to regulate growth, to mediate the immune response and to treat immunodeficiencies related to diseases such as HIV. Antagonists to the TRI receptor may be used to treat cautoimmune diseases, e.g. graft versus host rejection and allografice rejection, and T cell mediated autoimmune diseases. They may also be used to prevent apoptosis. They may also be used to prevent cytotoxicity and confections, cachexia, cerebral malaria or AIDS. The products can also be used for diagnosing the above diseases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New isolated tumour necrosis factor receptor - products for treating, e.g. tumours, auto-immur rejection, apoptosis or inflammation
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Synthetic.
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autoimmune disease; apoptosis; inflammation; cachexia; cerebral malaria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
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87.3%;
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R99942;

Q 밁 δÃ 밁 Š 36666668g 뭐` CCCCXXS PRACTOR X PRACTOR Query Match
Best Local Similarity
Matches 151; Conserv This sequence represents a mutated version of the full length osteoclastogenesis inhibitory factor (OCIF) of the invention. This sequence represents OCIF-CL in which amino acids 379-380 of the mature OCIF protein are deleted. The OCIF of the invention has a molecular weight by SDS-PAGE of 60 kD under reducing conditions and 120 kD under non-reducing conditions. The protein is adsorbed onto cation-exchangers or heparin and its activity is lowered after 10 mins at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90 deg.C. OCIF is useful in the control of bone resorption and therefore in the treatment and prevention of disorders of bone resorption, e.g. Key Peptide Sequence Claim 62; Page 117-119; 183pp; Japanese. DNA encoding osteoclastogenesis inhibitory factor protein - useful for bone resorption control, esp. treatment of osteoporosis WPI; 1996-402320/40. N-PSDB; T33172. Goto M, Higashio K, Nakagawa N, Shima N, 21-JUL-1995; 20-FEB-1995; 20-FEB-1996; osteoporosis. 29-AUG-1996 W09626217-A1 Protein Synthetic. osteoporosis Osteoclastogenesis inhibitory factor; OCIF; heparin; bone resorption; Mutated OCIF, OCIF-CL (SNOW) SNOW BRAND MILK PROD CO LTD. 23-APR-1997 82 61 Conservative 399 AA; (first entry) 95JP-0207508. 95JP-0054977. 96WO-JP00374 /note= "Signal peptide" 22..399 Location/Qualifiers /note= "Mature OCIF-CL" 89.3%; Kobayashi F, Mochizuki S, Tsuda E, Ueda M, Yano K, Score 887; DB 17; Pred. No. 1e-69; 7; Mismatches 15; Length 399; Indels Morinaga T; Yasuda H; 0; Gaps 0;

Search completed: January 27, 2001, 11:23:47 Job time: 69 sec

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GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.

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SUMMARIES

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PROSITE; PS50017; DEATH_DOMAIN;
PROSITE: PS50050; TNFR_NGFR_2;
PRODOM; PD000771; -; 1.
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PFAM; PF00020;
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DEVELOPMENTAL STAGE:
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15 TO DAY 17.
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TISSUE SPECIFICITY: EXPRESSED AT HIGH LEVELS IN LIVER, LU
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                                                        SGNREATQKCGIDVTLCEEAFFRFAVPTKIIPNWLSVLVDSLPGTKVNAESVERIKRRHS
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Pred. No. 2e-80;
Mismatches
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HSSP; P25942; 1CDF.
INTERPRO; IPR001368; -
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=97262071; PubMed=9108485;
Simonet W.S., Lacey D.L., Dunstan
Luethy R., Nguyen H.Q., Wooden S.
Derose M., Elliott R., Colombero
                                                                                                                                                                                                                                                                                                                                                                                                                               PFAM; PF00020; TNFR_c6;
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Suggs S., Boyle W.J.;
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SUBURIT: HOMODIMER (MAJOR FORM) AND MONOMER (MISSIMILARITY).
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Sato Y., Goto M., Yamaguchi K., Kuriyama M., Kanno T., Mu
Tsuda E., Morinaga T., Higashio K.;
"Identity of osteoclastogenesis inhibitory factor (OCIF)
osteoprotegerin (OPG): a mechanism by which OPG/OCIF inhi
osteoclastogenesis in vitro.";
challed the control of 
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MEDLINE=98351569; PubMed=9688283;
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MEDLINE-98151033; PubMed-9492069;
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                                      FUNCTION: MAY REQULATE BONE RESORPTION BY BLOCKING TERMINAL STAGES OF OSTEOCLAST DIFFERENTIATION AND ALLOWING ACCUMULATION OF NEWLY SYNTHESIZED BONE AND CARTILAGE. MAY INHIBIT IN VITRO OSTEOCLASTOGENESIS BY INTERUPTING CELL-TO-CELL SIGNALING BETWEEN STROMAL CELLS AND OSTEOCLAST PROGENITORS.
SUBUNIT: HOMODIMER (MAJOR FORM) AND MONOMER (MINOR FORM) (BY SIMILARITY).
SUBCELLULAR LOCATION: EXTRACELLULAR
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kami A.,
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Q9UHP4; 01-MAY-2000 01-MAY-2000 01-OCT-2000

Q9UHP4

PRELIMINARY;

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01-MAY-2000 (TrEMBLrel. 13, 01-MAY-2000 (TrEMBLrel. 13, 01-OCT-2000 (TrEMBLrel. 15, OSTEOPROTEGERIN (FRAGMENT).

Last sequence update)
Last annotation update)

Homo sapiens (Human) Eukaryota; Metazoa; (Mammalia; Eutheria; I

Chordata; Primates;

Craniata; V. Catarrhini;

Vertebrata; Euteleostom

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PROSITE; PS00652; TNER_NGER_1;
PROSITE; PS50050; TNER_NGER_2;
PRODOM; PD000771; -; 1.
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                                                                                                                                                                                                                                                                                           Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KIDNEY, PLACENTA, THYROID, SPINAL CORD AND LIVER. ALSO A NUMBER OF OTHER HEMATOPOLETIC AND IMMUNE ORGANS, NOT THE PANCREAS OR PERIPHERAL BLOOD LYMPHOCYTES.
SIMILARITY: CONTAINS A LA NGFR/TNFR-TYPE CYSTEINE-RICH L; ABOOZ146; BAA25910.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TISSUE SPECIFICITY: EXPRESSED AT HIGHEST
                                                                                                                                                                                                     SQEQTFQLLKLWKHQNRDQEMVKKIIQDIDLCENSVQRHLGHSNLTTEQLLALMESLPCK 1.5
SQEQTFQLLKLWKHQNRAQDIVKKIIQDIDLCENSVQRHIGHANLTEEQLRSLMESLPCK 1.5
                                                                                                                                    RKTMRFLHSFTMYRLYQKLFLEMIGNQVQSVKISCL
                                                                                                                                                                KISPEEIERTRKTCKSSEQLLKLLSLWRIKNGDQDTLKGLMYALKHLKTSHFPKTVTH...
                                                                                                                                                                                                                                                              SGNREATQKCGIDVTLCEEAFFRFAVPTKIIPNWLSVLVDSLPGTKVNAESVERIKRRii-
                                                                                                                           KKTIRFLHSFTMYKLYQKLFLEMIGNQVQSVKISCL
                                                                                                                                                                                                                                           SGNSESTQKCGIDVTLCEEAFFRFAVPTKFTPNWLSVLVDNLPGTKVNAESVERIKR
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AB008821;
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P25942; 1CDF.
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84.7%;
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1 BY
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POTENTIAL.
                                                                                                                                                                                                                                                                                          Score 969; DB 4;
Pred. No. 4.7e-69;
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TNFR-CYS
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SIMILARITY
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Best Local Similarity
Matches 35; Conserv
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Best Local
                                                                                                                                                                                                                                                                                                                        Kawabata A., Hikiji T., Kobatake N., Inagaki H., Ikema Y., Okitani R., Ota T., Suzuki Y., Obayashi M., Nishi T., Shib Tanaka T., Nakamura Y., Isogai T., Sugano S.;
"NEDO human cDNA sequencing project.";
Submitted (FEB-2000) to the EMBL/GenBank/DDBJ databases.
EMBL, AK000153; BAA90978.1;
SEQUENCE 636 AA; 72098 MW; B541A0CD9E8DFB4F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-OCT-2000 (TrEMBLrel. 15, Created)
01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-OCT-2000 (TrEMBLrel. 15, Last annotation update)
CDNA FLJ20146 FIS, CLONE COL07877.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TISSUE=PLACENTA;
He Z.-Y., Yang G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TISSUE=COLON;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=9606;
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[1]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
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                                           HSNLTTEQLLALMESLPGKKISPEEIERTRKTCKSSEQLLKLLSLWRIKNGDQDTLKGLM
                                                                                                                                           ESVERIKER----HSSQEQTFQLLK---LWKHQNRDQEMVKKIIQDIDLCESSVQRH-LG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SGNREATQKCGIDVTLCEEAFFRFAVPTKIIPNWLSVLVDSLPGTKVNAESVERIKRRHS
                                                                                               EELKDIKKKVIAQHCSQKDTAELLRGLSLWNHAEERQKFFKYSVDEKSDKEAEVSEHSTG
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PF00020; TNFR_C6; 3.
TE; PS00652; TNFR_NGFR_1;
TE; PS50050; TNFR_NGFR_2;
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on of Osteoprotegerin from Homo sapiens.";
Sheng Wu Wu Li Hsueh Pao 31:680-684(1999).
  NPQELCRCSQVSMKWSQLTKTGSLW---
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Pred. No. 1
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Pred. No. 1.2e-66;
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01-OCT-2000 (TrEMBLrel. 15, 1
01-OCT-2000 (TrEMBLrel. 15, 1
p45SKP2-LIKE PROTEIN.
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01-OCT-2000
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01-OCT-2000
"cDNA cloning of a new human protein, FLR1, co
F-box and leucine-rich repeat.";
Submitted (APR-1999) to the EMBL/GenBank/DDBJ
EMBL; AF142481; AAF66616.1; -.
SEQUENCE 691 AA; 78554 MW; 923A1B31590E514
                                                                                                                                                                                                                                                                FLR1.
Homo sapiens (Human).
'``rvota; Metazoa; Chordata;'
'`rvota; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                  01-OCT-2000 (TrEMBLrel.
01-OCT-2000 (TrEMBLrel.
F-BOX PROTEIN FLR1.
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Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                                  SEQUENCE FROM N.A. Shimbara N.;
                                                                                                                                                                                                                                                             NCBI_TaxID=9606;
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Wang Y., Fu G., Chen Z., Han Z.;
Submitted (JUN-1999) to the EMBL/GenBank/DDBJ
EMBL, AF157323; AAF67489.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Huang C., Zhang C., Wu T., Peng Y., Gu Y., Jir
Han Z., Wang Y., Chen Z., Fu G.;
"A novel gene expressed in the human adrenal of
Submitted (MAY-2000) to the EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=9606;
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Pred. No. 1
                                                                                                                                                                                                                                                                                          Craniata; Vertebrata; Catarrhini; Hominidae;
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01-MAY-2000
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GOLGIN-84.
Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      INTERPRO; IPR001810; -. PFAM: PF00560; LRR; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Winston J.T., Elledge S.J., Harper W.;
"A family of mammalian F-box proteins.";
Submitted (AUG-1999) to the EMBL/GenBank/DDBJ
EMBL, AF176700; AAF03700.1; -.
INTERPRO; IPR001611; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens (Human).
Eukaryota; Metazoa; (
Mammalia; Eutheria; E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      F-BOX PROTEIN FBL5 (FRAGMENT).
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(TrEMBLrel. 13, Last sequence up)
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Primates;
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Last sequence update)
Last annotation updat
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Pred. No. 1
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       Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                    PRT;
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01-MAY-2000 (
01-MAY-2000 (
01-JUN-2000 (
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"Identific.tion and characterization of golgin-84, a novel Golginegral membrane protein with a cytoplasmic coiled coil domain Biol. Chem. 274:2953-2962(1999).
EMBL, AF085199; AAD09753.1;
                                                                                                                                                                                                                                                  Curr. Biol. 9:1177-1179(1999).
EMBL; AF174591; AAF04512.1; -.
INTERPRO; IPR001611; -.
                                                                                                                                                                                                               INTERPRO; IPRO01810; -.
PFAM; PF00560; LRR; 1.
PFAM; PF00646; F-box; 1
                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A. Cenciarelli C., Chiaur D.S.,
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                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                    Pagano M.;
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                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa;
Mammalia; Eutheria;
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 174 K 174
                         61 FSYL-
                                                                                         58 RHSSQEQTFQLLK---LWKHQNRDQEMVKK11QDIDLCESSVQRH-LGHSNLTTEQLL... | 13
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                                                 MESLPGKKISPEEIERTRKTCKSSEQLLKLLSLWRIKNGDQDTLKGLMYALKHLKTSHF: !73
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39; Conserv
                                                                                                                         Similarity 26.4 32; Conservative
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0 (TrembLrel. 13, Las
0 (TrembLrel. 14, Las
EIN FBL5 (FRAGMENT).
                                                                                                                                                                                         535 AA; 59824
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                           -NPQELCRCSQVSMKWSQLTKTGSLW
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Primates;
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Last annotation update)
                                                                                                                         Score 100; DB
Pred. No. 3.2;
19; Mismatches
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Pred. No. 2.6;
36; Mismatches
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                                                                                                                                                                                                                                                                                                             Guardavaccaro
                                                                                                                                                                                                                                                                                                                                                                Craniata; Vertebrata; Catarrhini; Hominidae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
                                                                                                                                                                                       110B59DF98C3F1EE CRC64;
                                                                                                                                                                                                                                                                                      F-box proteins.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           535
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                                                                                                                                      DB 4;
.2;
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                                                                                                                                                                                                                                                                                                                                                                 Hominidae;
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                                                                                                                                                                                                                                                                                                              Parks W.,
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                                                                                                                                                 Length 535;
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                                                                                                                            Indels
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                                                                                                                                                                                                                                                                                                                                                                             Euteleostomi;
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                         -KHLYPVHWA
                                                                                                                                                                                                                                                                                                              vidal M
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RESULT 11
O9UJT7
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DT 01-MAY
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DT 01-MAY
DT 01-MAY
COC ELKADT
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Q40767
BHHHAI
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 35
                                                                              angiosperms.";
Plant Mol. Biol. 27:69-78(1995).
Plant Mol. Biol. 27:69-78(1995).
Plant Mol. Biol. 27:69-78(1995).
Plant Mol. 27:69-78(1995).
Plant Mol. 27:69-78(1995).
Plant Mol. 27:69-78(1995).
                                                                                                                                                                                                                                                                                                                                                 Picea abies (Norway spruce)
Eukaryota; Viridiplantae; Er
Coniferopsida; Coniferales;
                                                                                                                                                                                                              MEDLINE=95170009; PubMed=7865797; Tandre K., Albert V.A., Sundas A.
                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
TISSUE=FEMALE CONE;
                                                                                                                                                                                                                                                                                                                                                                                                                 MADS OR DAL3.
                  HSSP; P11831; 1SRS.
MENDEL; 9965; Picab
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-NOV-1996
01-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "F-box protein FBL4 containing Submitted (CCT-1999) to the EME EMBL; AF199420; AAF09249.1; -. INTERPRO; IPRO01611; -. INTERPRO; IPRO01810; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-MAY-2000 (TrEMBLrel.
01-MAY-2000 (TrEMBLrel.
01-JUN-2000 (TrEMBLrel.
                                                              EMBL; x79281; CAA55868.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-NOV-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q40767;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PFAM; PF00560; LRR; 1. PFAM; PF00646; F-box;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q9UJT7
INTERPRO;
                                                                                                                                                                                            "Conifer homologues to genes that
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      F-BOX PROTEIN FBL4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q9UJT7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       162 YALKHLKTSHFPK 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   204 ITHLPPEVMLSIFSYL-----NPQELCRCSQVSMKWSQLTKTGSLW-
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            145
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          lyin G.P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EELKDIKKKVIAQHCSQKDTAELLRGLSLWNHAEERQKFFKYSVDEKSDKAEVS-EHSTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ESVERIKRR----HSSQEQTFQLLK---LWKHQNRDQEMVK-KIIQDIDLCESSVQRHLG
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35; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KHLYPVHWAR
i65; Picab; MADS; 9965
IPR002100; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                             (TrEMBLrel.) (TrEMBLrel.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           690 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; F-box; 1.
                                                                                                                                                                                                                                       PubMed=7865797;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Primates;
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13,
                                                                                                                                                                                                                                                                                                                                                   e) (Picea excelsa)
Embryophyta; Trac
s; Pinaceae; Picea
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Last
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Last sequence update)
Last annotation update)
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Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Craniata; Vertebrata; Euteleostomi;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                             sequence update) annotation updat
                                                                                                       (BY SIMILARITY). FOUND IN SRF-TYPE
                                                                                                                                                                                            Engstrom P.;
control floral development
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    96.5; DI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       203
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                                                                                                                                                                                                                                                                                                                                                                      Tracheophyta;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CRC64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
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                                                                                                         TRANSCRIPTION
                                                                                                                                                                                                                                                                                                                                                                        Spermatophyta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               161
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72 WKHQ----NRDQEMVKKIIQDIDLCESSVQRH----LGHSNLTTEQLLALM----

---ES: 17

FFREAVPTKIIPNWLSVLVDS-LP--GTKVNAE-SVERIKRR-----HSSQEQTFQLLK: /1 EPTFGVPVSSDGNVVAEVVDGRLPAVGTRSKYDLTVDELRRRCGAPEHMNQSALYCFFEK 2/6

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217

Matches

Similarity

Conservative

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Mismatches

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RESULT
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Query Match
Best Local
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Best Local :
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Q19863;
01-NOV-1996
                                                                                                                                                                                                                                                                                                                                            Wilson R., Ainscough R., Anderson K., Baynes C., Berks M.,
Bonfield J., Burton J., Connell M., Copsey T., Cooper J., Cooper
Craxton M., Dear S., Du Z., Durbin R., Favello A., Fulton L.,
Gardner A., Green P., Hawkins T., Hillier L., Jier M., Johnston
Jones M., Kershaw J., Kirsten J., Laister N., Latreille P.,
Lightning J., Lloyd C., Mcmurray A., Mortimore B., O'Callaghan I'.
Parsons J., Percy C., Rifken L., Roopra A., Saunders D., Shownkeen,
Smaldon N., Smith A., Sonnhammer E., Staden R., Sulston J.,
Thiorypoole Staden R., Sulston Staden R.,
Thiorypoole Staden R.,
Thiorypoole Staden R.,
Thiorypoole Staden
                                                                                                                              EMBL; Z68315; CAA92669.1; SEQUENCE 486 AA; 55618
                                                                                                                                                                                                    Eukaryota; Metazoa; Nemat
Rhabditidae; Peloderinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-NOV-1996 (TrEMBLrel. 01-JAN-1999 (TrEMBLrel.
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PROSITE; PS00350; MADS_BOX_1;
PROSITE; PS50066; MADS_BOX_2;
Transcription regulation; DNA
SEQUENCE 203 AA; 23842 MW;
                                                                                                                                                                                             Nature 368:32-38(1994).
                                                                                                                                                                                                                                                                                          Thierry-Mieg J., Thomas K., Vaudin M., Vaughan K., Wate Watson A., Weinstock L., Wilkinson-Sproat J., Wohldman
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=94150718; PubMed=7906398;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Burton
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=6239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       118
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EATOKCGIDVTLC----EEAFFRFAVPT--KIIPNWLSVLVDSLPGTKVNAESVERIKKK 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TANREERIKILESRQRKMVGEELASCALSDLNLLESQVERGLRHIRARKTQILVAEIEL:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              \texttt{ELSYLCDAEVALIVESPRGKLYEFANPSMQKMLERYDKCSEGSNTTNTTKERDIQYLKF})_{L}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               36;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (DEC-1995) to the
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Nematoda; Chromadorea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8.5%;
23.5%;
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25.1%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Caenorhabditis
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   36;
Score 95; DB Pred. No. 7.1;
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Pred. No. 2.6;
86; Mismatches
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Best Local Similarity
Matches 37; Conserv
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Q9QYE6;
01-MAY-2000 (TrEMBLrel. 13, C
01-MAY-2000 (TrEMBLrel. 13, L
01-MAY-2000 (TrEMBLrel. 13, L
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GOLGA5 OR RET-II.
Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata; C
Mammalia; Eutheria; Rodentia; S
NCBI_TaxID=10090;
                                                                                               SUMIKO.
SUMIKO.
Mus musculus (Mouse).
Mus musculus (Mouse).
Metazoa; Chordata;
Metazoa; Rodentia;
SEQUENCE FROM N.A.

KU P.T., YOU M.J., COTTAM M.K., Bose H.R. Jr.;

"Suppression of Anti-immunoglobuln-induced Apoptosis in B

"Suppression volument Protein.";

Cells by a Novel Nuclear Protein.";

Submitted (SEP-1997) to the EMBL/GenBank/DDBJ databases.

EMBL; AF026274; AAF21628.1; -.
                                                                                           Eukaryota; Metazoa; Mammalia; Eutheria; NCBI_TaxID=10090;
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01-NOV-1998 (TrEMBLrel. 08, Last seq
01-OCT-2000 (TrEMBLrel. 15, Last ann
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                                                                                                                                                                                                                                                                                              LRNQLTNKTLSNSSQSELESRLHQLTETLIQKQTMLESLSTEKNSL 613
                                                                                                                                                                                                                                                                                                                       LKTSHFPKTVTHSLRKTMRF-LHSFTMYRLYQKLFLEMIGNQVQSV 211
                                                                                                                                                                                                                                                                                                                                                   REQUIDING IAKORTSKOELETELERMKOEFRYME-EDLHRTKNTLOSRIKDREEEIOK
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PGKKISPEETER------TRKTCKSSEQLLKLLSLWRIK-NGDQDTLKG---
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SQ SEQUENCE 729 AA; 82450 MW; 6E3389FA82361AFA CRC64;
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Matches 37
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                                                                   TEQUIALMESTPGKKISPEEIERTRKTCKSSEQLIKLISIMRIKNGDQDTIKGLMYAI be 166
LRNQLTNKTLSNSSQSELESRLHQLTETLIQKQTMLESLSTEKNSL
                                                   REQUODLODQIAKORTSKQELETELERMKQEFRYME-EDLHRTKNTLQSRIKDREEE1 ( 167
                                                                                                    ASSMELEELRHEKEMQKEEIQKLMGQMHQLRSE-----LQDME-----AQQVSEA;.
                      LKTSHFPKTVTHSLRKTMRF-LHSFTMYRLYQKLFLEM1GNQVQSV
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22.3%; Pre
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Pred. No. 14;
37; Mismatches
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Search completed: January 27, 2001, 11:24:32 Job time: 114 sec

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GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.

OM protein - protein search, using sw model

Run on: January 27, 2001, 11:22:38; Search time 17.62 Seconds (without alignments)
395.887 Million cell updates/sec

bring table:

Title: Perfect score:

BLOSUM62
Gapop 10.0 , Gapext 0.5

sequence: US-09-389-545-2_COPY_186_401 1113 SGNREATQKCGIDVTLCEEA.....QKLFLEMIGNQVQSVKISCL 216

88757 seqs, 32294092 residues

Searched:

Total number of hits satisfying chosen parameters: 88757

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database : SwissProt_39:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

30 32 33	NO	Result
79.5 79.5 79.5 79.5	Score 100 95.5 92 91.5 96.5 86.5 86.5 86.5 88.5 88.5 88.5 88.5 8	
7.1 7.1 7.1 7.1	MARCON III	Ollera
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ALIGNMENTS

15-UUL-1998 (Rel. 17) Last sequence update) 15-UUL-1998 (Rel. 36, Last annotation update) MYCSIN-2 ISCOROMN MYCSIN-2 ISCOROMN MYC2 OR CDC66 OR YOR326W OR 06167. Saccharomyces cerevisiae (Baker's yeast) ENKALYOLE; FUNDAMED-1896 (Baker's yeast) Saccharomyces cerevisiae (Baker's yeast) ENKALYOLE; FUNDAMED-2016335; SOUDENCE FROM N.A. STRAIN-GRR88; C., Prendergast J.A., Singer R.A.; "The Saccharomyces cerevisiae MYC2 gene encodes an essential myn. STRAIN-GRR886 / FY1679; J. Cell Biol. 113:539-551(1991) SEQUENCE OF 1-748 FROM N.A. STRAIN-SJ880 / FY1679; MEDLINE-97051589; PubMed-8896266; Pearson B.M., Hernando Y., Payne J., Wolf S.S., Kalogeropoulos / SPANH-SJ880 / FY1679; MEDLINE-97051589; PubMed-8896266; Pearson B.M., Hernando Y., Payne J., Wolf S.S., Kalogeropoulos / SPANH-SJ880 / FY1679; MEDLINE-97051589; PubMed-8896266; Pearson B.M., Hernando Y., Payne J., Wolf S.S., Kalogeropoulos / SPANH-SJ880 / FY1679; MEDLINE-97051585; PubMed-8896266; Pearson B.M., Hernando Y., Payne J., Wolf E.S., Kalogeropoulos / SPANH-SJ880 / FY1679; MEDLINE-97051585; PubMed-8896266; Pearson B.M., Hernando Y., Payne J., Wolf E.S., Kalogeropoulos / SPANH-SJ880 / FY1679; MEDLINE-97051585; PubMed-8896266; Pearson B.M., Hernando Y., Payne J., Wolf E.S., Kalogeropoulos / SPANH-SJ880 / FY1679; MEDLINE-97051585; PubMed-8896266; Pearson B.M., Hernando Y., Payne J., Wolf E.S., Kalogeropoulos / SPANH-SJ880 / FY1679; MEDLINE-97051585; PubMed-8896266; MEDLINE-97051585; PubMed-8896266; MEDLINE-97051585; PubMed-8896266; MEDLINE-97051586; MEDLINE-97051586; MEDLINE-97051586; MEDLINE-97051586; MEDLINE-97051586; MEDLINE-97051586; MEDLINE-97051686; MEDLINE-97051686;	STANDAR
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Z75234; CAA99646.1; Z75235; CAA99648.1;

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                                                                Deviln K., Churcher C.M., Barrell B.G., Rajandream M.A., Wood V. Submitted (AUG-1997) to the EMBL/GenBank/DDBJ databases.
-i- SIMILARITY: TO YEAST D9798.LO.
-i- CAUTION: THE INITIATOR METHIONINE MAY BE FURTHER DOWNSTREAM.
                                                                                                                                                STRAIN-972;
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Eukaryota; Fungi; Ascomycota; Schizosacch
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INTERPRO; IPR002710; ...
PFAM; PF01843; DLL; 1.
PFAM; PF001863; myosin_head; 1.
PFAM; PF00063; myosin_head; 1.
PRINTS; PR00193; MYOSINHEAVY.
MYOSIn; Coiled coil; ATP-binding; Actin-binding;
MYOSIn; Coiled coil; ATP-binding; Actin-binding;
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--- FUNCTION: NECESSARY FOR SEXUAL DIFFERENTIATION AND ME-
---- SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN (POTE
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Schizosaccharomycetaceae; Schizosaccharomyces.
use by non-profit institutions as long modified and this statement is not removed: entities requires a license agreement (See or send an email to license@isb-sib.ch).
                                           This SWISS-PROT entry is copyright. It is produced between the Swiss Institute of Bioinformatics the European Bioinformatics Institute. There
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Z54140; CAA90815.1;
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... a wha promein C6G9.06C IN CHROMOSOME
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Pred. No. 9.5;
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PRINTS; PRO0051; DNAA; 1.
PROSITE; PS01008; DNAA; 1.
DNA replication; DNA-binding;
NP_BIND 168 175

463 AA;

53005 MW;

F3CA5683DD3BB1A1 CRC64;

ATP-binding.
ATP (POTENTIAL)

PFAM; PF00308; bac_dnaA; 1. INTERPRO; IPRO01957;

AJ235272; CAA15045.1;

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RESULT 5
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                                                                                                                                                                                                                                                                                                     This
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                                                                       entities requires a license agreement (sor send an email to license@isb-sib.ch).
                                                                                                                                                      modified
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CHROMOSOMAL
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EMBL; U55213; AAA99160.1;
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                                                                                                                                          non-profit institutions as long and this statement is not removed.
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                   "Chan G.K.T., Schaar B.T., Yen T.J.;
"Characterization of the kinetochore binding domain interactions with the kinetochore proteins CENP-F an J. Cell Biol. 143:49-63(1998).

-!- FUNCTION: PROBABLY REQUIRED FOR KINETOCHORE FUNCTION:
                                                                                                                                                                                                                                                                                                                                           Li Q., Ke Y., Kapp J.A., Fertig N., Medsger T.A. Jr., "A novel cell-cycle-dependent 350-kDa nuclear protein: domain sufficient for nuclear localization."; Biochem. Biophys. Res. Commun. 212:220-228(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Zhu X., Mancini M.A., Chang K.-H., Liu C.-Y., Chen C.-F., Shan B., Jones D., Yang-Feng T.L., Lee W.-H.; "Characterization of a novel 350-kilodalton nuclear phosphoprotein that is specifically involved in mitotic-phase progression."; mol. Cell. Biol. 15:5017-5029(1995).
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Liao H., Winkfein R.J., Mack G., Rattner J.B., 1
"CENP-F is a protein of the nuclear matrix that
kinetochores at late G2 and is rapidly degraded
J. Cell Biol. 130:507-518(1995).
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01-FEB-1996 (Rel. 33, Created)
01-FEB-1996 (Rel. 33, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation updat
CENP-F KINETOCHORE PROTEIN (CENTROMERE PROT
                                                                                                                       MEDLINE=98437347; PubMed=9763420;
                                                                                                                                                                                         centromere/kinetochore targeting, and dimerization.", J. Biol. Chem. 270:19545-19550(1995).
                                                                                                                                                                                                                                                                                                     CHARACTERIZATION.
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TISSUE=BREAST CARCINOMA;
MEDLINE=95348175; PubMed
                                                                                                                                                                                                                                   Zhu X., Chang K.-H., He D., Mancini M.A., Brinkley W.R., Lee W.-H.; "The C terminus of mitosin is essential for its nuclear localization."
                                                                                                                                                                                                                                                                                 MEDLINE-95370296;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE OF 2194-3210 FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE OF 1-1493 AND 1590-3210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=95379848;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mammalia;
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; Metazoa; Chordata;
Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                               PubMed=7642639;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PubMed=7651420;
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23.8%;
                      REQUIRED FOR KINETOCHORE FUNCTION,
  DURING
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Pred. No.
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INTERACTS WITH
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RGA1 OR

DBM1

995 (Rel. 31, Created)
995 (Rel. 31, Last sequence update)
998 (Rel. 37, Last annotation update)
998 (Rel. 37, Last annotation update)
GTPASE ACTIVATING PROTEIN RGA1/DBM1.
DBM1 OR THE1 OR YOR127W OR O3290 OR YOR3290W.

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RESULT 7
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01-FEB-1995 (Rel
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EMBL; U30872; AAA82935.1;
EMBL; U25725; AAA86889.1;
HSSP; P02649; 1LE4.
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SUBCELLULAR LOCATION: NUCLEAR MATRIX (BUT NOT IN THE N
REORGANIZATION TO THE KINETOCHORE/CENTROMERE (CORONAL
THE OUTER PLATE) AND THE SPLNDLE DURING MITOSIS.
DEVELOPMENTAL STAGE: GRADUALLY ACCUMULATES DURING THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 European
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                                                                                                                                                                                                     -----SGEKNRLAGELQLLLEEIKSSKDQLKELTLENSELKKSLDCMH
                                                                                                                                                                                                                                          LLSLWRIKNGDQDTLKG-LMYALKHLKTSHFP-KTVT
                                                                                                                                                                                                                                                                                 TLEVLQSSYKNLENELELTKMDKMSFVEKVNKMTAKETELQREMHEMAQKTAELQEEL--
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                                                                                                                                                                                                                                                                                                                    -IDLCESSVQRHLGHSNLTTEQLLALMESLPGKKISPEEIER----TRKTCKSSEQLLK
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G -> D (IN REF. 2).
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V -> A (IN REF. 2).
ER -> DG (IN REF. 3).
L -> Q (IN REF. 3).
D -> N (IN REF. 2).
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34; Mismatches
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EMBL; U07421; AAA16875.1; -.
EMBL; X90518; CAA62108.1; -.
EMBL; X90518; CAA64046.1; -.
EMBL; Z75035; CAA99326.1; -.
EMBL; X90950; CAA62445.1; -.
EMBL; X90950; CAA62445.1; -.
EMBL; L02617; AAA35153.1; -.
PIR; X48535; S48538.
SGD; S0005653; RGA1.
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Woss H., Benes V., Andrade M.A., Valencia A.,
Schwager C., Paces V., Sander C., Ansorge W.;
"DNA sequencing and analysis of 130 kb from ye
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "Dominant genetics using a yeast genomic library under the control a strong inducible promoter.";
a strong inducible promoter.";
proc. Natl. Acad. Sci. U.S.A. 89:11589-11593(1992).
-i- FUNCTION: GTPASE-ACTIVATING PROTEIN (GAP) FOR CDC42 AND/OR RHO1
NEGATIVE REGULATOR OF THE PHEROMONE-RESPONSE PATHWAY THROUGH TH
STE20 PROTEIN KINASE; ACTS AT A STEP BETWEEN THE G-PROTEIN AND
MAP KINASE MODULE. DOMINANT SUPPRESSOR OF BUD EMERGENCE DEFECT
CAUSED BY DELETION OF IPL2/BEM2. INVOLVED IN THE CONTROL OF
POLARIZED CELL GROWTH AND PROPER BUD SITE SELECTION.
-i- SIMILARITY: CONTAINS 2 LIM DOMAINS. THE LIM DOMAIN BINDS 2 ZINC
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LIM domain-containing Dbml GTPase-activating protein is required
normal cellular morphogenesis in Saccharomyces cerevisiae.";
Cell. Biol. 16:1376-1390(1996).
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-- FUNCTION: MAY PLAY A ROLE IN SEPTIN ASSEMBLY.
-- SIMILARITY: BELONGS TO THE SER/THR FAMILY OF PROTEIN
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30-MAY-2000 (Rel. 39, Last annotation
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GIN4 OR YDR507C OR D9719.13.
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                                                                                                                                                        MEDLINE=99030835; PubMed=9813093;
Longtine M.S., Fares H., Pringle J.R.;
"Role of the yeast Gin4p protein kinase in septin assembly
relationship between septin assembly and septin function.";
J. Cell Biol. 143:719-736(1998).
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                                                                                                                                                                                                                                                                                                                                                                                                   DSP.
Homo sapiens (Human).
Homo sapiens (Human).
- hervota; Metazoa; Chordata;
- heria; Primates;
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PROSITE; PS00108; PROTEIN_KINASE_ET; 1.
PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.
Transferase; Serine/threonine-protein kinase;
DOMAIN 19 289 PROTEIN KINASE.
                                                                                                                                                                                                                                                       the
                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
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EMBL; U33057; AAB64949.1; -.
HSSP; Q63450; 1A06.
SGD; S0002915; GIN4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DESMOPLAKIN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        P15924;
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                                                                                                                                                                                                                                                                              "Structure of the human desmoplakins. Implications
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                                                                                                                                                                                                   e desmosomal plaque.";
Biol. Chem. 265:2603-2612(1990).
- FUNCTION: MAY PLAY A ROLE IN ATTACHING INTERMEDIATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          50
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nes 43; Conserv
                                                    THE CELL SURFACE.

SUBUNIT: DP IS A TWO-STRANDED COILED COIL STRUCTURE.

SUBCELLULAR LOCATION: INNERMOST PORTION OF THE DESMOSOMAL PLAQUE.

ALTERNATIVE PRODUCTS: 2 ISOFORMS; DPI (SHOWN HERE) AND DPII; ARE

PRODUCED BY ALTERNATIVE SPLICING.

TISSUE SPECIFICITY: DPI IS APPARENTLY AN OBLIGATE CONSTITUENT OF
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(Rel. 14, Last sequence update)
(Rel. 39, Last annotation updat
I AND II (DPI AND DPII) (FRAGME
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33
48
                                   DPII RESIDE PREDOMINANTLY IN
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Pred. No. 22;
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BY SIMILARITY.
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                                   AND CELLS
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Matches 57
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S_BACSU
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MOD_RES
VARSPLIC
SEQUENCE
 STRAIN-168
           SEQUENCE FROM N.A.
                                     Bacillus/Staphylococcus
                                                  Bactería; Firmicutes;
                                                            Bacillus subtilis.
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                                                                                    STAGE III SPORULATION
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between
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MIM; 125647;
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                                                                                                                                                                                                                                                                                     LTTEQLLALMESLPGKKISPEEIERTRKTCKSSEQ - - LLKLLSLWRIKNGDQDTLKGLMY
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57; Conser
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Coiled coil; Phosphorylation; Cytoskeleton;
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                                                                                                (Rel. 34, (Rel. 34, (Rel. 34, (Rel. 34,
                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
JH642
                                                                                                                                                  STANDARD;
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                                                                                    Last sequence up Last annotation PROTEIN AG.
                                                  Bacillus/Clostridium
                                                                                                                       Created)
                                   group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4.5 x 38 AA TANDEM REPEATS, A DOMAIN.
4.5 x 38 AA TANDEM REPEATS, B DOMAIN.
SINGLE NEAR COMPLETE REPEATS
4.5 x 38 AA TANDEM REPEATS, C DOMAIN
5 x 38 AA TANDEM REPEATS, C DOMAIN
6 x 4 AA TANDEM REPEATS OF G-5-R-[5:
TO THE HUMAN BP ANTIGEN (AA 427-600)
PHOSPHORYLATION (BY CAPK) (POTENTIAL)
MISSING (IN ISOFORM DPII).
8 MW; AF45104E4BFFC806 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                               38;
                                                                                                                                                                                                                                                                                                                                                                                                              Score 86; DB
Pred. No. 41;
38; Mismatches
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COILED COIL (POTENTIAL).
2.5 X 156 AA APPROXIMATE TANDEM REPEATS
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4.5 X 38 AA TAN
4.5 X 38 AA TAN
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                                                                                                update
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SUBUNIT: MAY BE A HOMODIMER, WHICH ASSOCIATES WITH MULTIPI. CALMODULIN OR MYOSIN LIGHT CHAINS. SIMILARITY: BELONGS TO THE MYOSIN HEAVY CHAIN FAMILY. CLASS

between

SWISS-PROT entry is copyright. It is produced een the Swiss Institute of Bioinformatics and

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MYOSIN SUBFAMILY

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Best Local S
Matches 34
                                                                                                                                                                                                                                 01-JUN-1994 (Rel. 29, Create O1-JUN-1994 (Rel. 29, Last s. O1-OCT-2000 (Rel. 40, Last a. DILUTE MYOSIN HEAVY CHAIN, N. MYOSA OR DILUTE.
SEQUENCE FROM N.A.
STRAIN=C57BL/6; TISSUE=BRAIN;
MEDLINE=91141583; PubMed=1996138;
Mercer J.A., Seperack P.K., Strobel
                                                                                                                                                                                                                                                                                                                 MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; U35252; AAA76726.1; -. EMBL; D84432; BAA12566.1; -. EMBL; Z99116; CAB14368.1; -. SUBTILIST; BG11414; SPOIIIAG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          use by non-profit institutions as long modified and this statement is not removed entitles requires a license agreement (See or send an email to license@isb-sib.ch)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN=168 / JH642;
Kobayashi Y., Mizuno M., Mas
Sato T., Takeuchi M.;
Submitted (MAY-1996) to the
                                                                                                                                                                                                               Mus musculus (Mouse
Eukaryota; Metazoa;
                                                                                                                                                                                                                                                                                          099104;
                                                                                                                                                                                                                                                                                                   MY5A_MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sporulation; Transmembrane.
TRANSMEM 30 50
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                                                                      Mercer J.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N
                                                                                  REVISIONS
                                                                                                     Nature 349:709-712(1991)
                                                                                                                                      Jenkins N.A.;
                                                                                                                                                                                                       Mammalia;
                                                                                                                         Novel myosin
                                                                                                                                                                                                                                                                                                                                                            158
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; Metazoa; Chordata;
Eutheria; Rodentia;
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                                                                     Seperack P.K.,
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Pred.
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F -> S (IN REF. 2).
; 110310C897BD8691 CRC64;
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Matches 27
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INTERPRO; IPRO01609; -.
INTERPRO; IPRO02710; -.
PFAM; PF01843; DIL; 1.
PFAM; PF00612; IQ; 6.
                       SMC3_YEAST STANDARD; PRT; 12
P47037;
01-FEB-1996 (Rel. 33, Created)
01-FEB-1996 (Rel. 33, Last sequence up
15-JUL-1998 (Rel. 36, Last annotation
CHROMOSOME SEGREGATION PROTEIN SMC3 (D
SMC3 OR YJL074C OR J1049.
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       Saccharomyces cerevisiae (Baker's yeast) Eukaryota; Fungi; Ascomycota; Saccharomy
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HSSP; P08799; 1MND.
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                                                                                                                                                                                                         Similarity 27; Conserv
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Pred. No. 69;
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5 X APPROXIMATE TANDEM RE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -i- SUBCELLULAR LOCATION: NUCLEAR (POTENTIAL).
-i- DOMAIN: CONSISTS OF TWO PUTATIVE CENTRAL COLLED-COIL REGIONS
-FLANKED BY PUTATIVE GLOBULAR REGIONS AT THE N- AND C-TERMINUS
-i- SIMILARITY: BELONGS TO THE SMC FAMILY.
                                       RETICULOCYTE
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                                                                                                                                                          _PLAVB
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PROTEIN 2 (FRAGMENT).
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COILED COIL (POTENTIAL).

COILED COIL (POTENTIAL).

MW; B152D88F7780341F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               coil; Nuclear protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                          1251 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   prevent premature separation
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46;
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RESULT
PCNT_MOU
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Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                          MOUSE
                                                                                                                                                                                                       Mus musculus (Mouse,
Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                               PCNT_MOUSE P48725;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NON_TER
NON_TER
SEQUENCE
                                                                                                                microtubule organization.";
Cell 76:639-650(1994).
                                                                                                                                                                                                                                                  PCNT
                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                             PERICENTRIN
                                                                                                                                                                                                                                                                         01-FEB-1996
30-MAY-2000
                                                                                                                                                                                                                                                                                                   01-FEB-1996
                                                                                                                                                                                                                                                                                                                                                                                              1062
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE-92315338; PubMed-1617731;
Galinski M.R., Medina C.C., Ingravallo P., Barnwell J.W.;
"A reticulocyte-binding protein complex of Plasmodium vivax
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Alveolata; Apicomplexa; Haemosporida; Plasmodium.
                                                                                                                                          Doxsey S.J., Stein P., Evans L., Pericentrin, a highly conserved
                                                                                                                                                                    MEDLINE=94170365; PubMed=8124707;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Malaria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; M88098; AAA29744.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         modified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 the European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     - ! - SUBCELLULAR LOCATION: MEMBRANE-BOUND (PROBABLE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Plasmodium vivax (strain Belem).
                                                                                                                                                                                                                                                                                                                                                                                                                      148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        39 VDSLPGTKVNAESVERIKRRHSSQEQTFQLLK--LWKHQNRDQEMVKKIIQDIDLCES: ,
                                                           CENTROSOME INVOLVED IN THE INITIAL ESTABLISHMENT OF ORGANIZED.
MICROTUBULE ARRAYS IN BOTH MITOSIS AND MEIOSIS.
TISSUE SPECIFICITY: HIGHEST LEVELS FOUND IN KIDNEY, THYMUS ...
                                     DOMAIN:
                                                                                                     FUNCTION: INTEGRAL COMPONENT OF THE FILAMENTOUS MATRIX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 69:1213-1226(1992).
FUNCTION: INVOLVED IN RETHUMAN RETICULOCYTE CELLS
                       DOMAIN: COMPOSED OF A COILED-COIL CENTRAL HELICAL N- AND C-TERMINALS.
                                                  LIVER.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SWISS-PROT entry is copyright. It is produced through a collaboration een the Swiss Institute of Bioinformatics and the EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                             KLKGVIIEVNENTEMNTIESSAKEIEALYNELKNKKTS 1099
                                                                                                                                                                                                                                                                                                                                                                                                                                               KAYLAYIKKNYEDTVQDVLTLNEHFNTKQVSNHEPTNFDKSNKSSEELTKAVTDSKT1:..: 1061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QRHLGHSNL----TTEQLLALMESLPGKKISPEEIERTRKTCKSSEQLLKLLS-----1 v. i. 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IDSL----NTALDELLKKGRTCEVSRYKLIKDTVTKETSDDTELINTI-----EKNA F, JUL
                                                                                                                                                                                                                                                                                                                                                                                                                      RIK----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Receptor; Membrane.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           requires a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     non-profit
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1251 AA;
                                                  LOW LEVELS IN BRAIN, MUSCLE,
                                                                                                                                                                                                                                                                        (Rel.
                                                                                                                                                                                                                                                                                                (Rel.
                                                                                                                                                                                                                                   (Mouse)
                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                  NGDQDT-----LKGLMYALKHLKTS 170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1251
AA; 143741 MW;
                                                                                                                                                                                                                                                                        33, Created)
33, Last sequal
39, Last anno
                                                                                                                                                                                                          Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           license agreement
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24.1%;
                                                                                                                                                                                                                                                                     Last sequence up
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 83;
                                                                                                                                                                                                          Craniata; Vertebrata; Euteleostom.
Sciurognathi; Muridae; Murinae; Mu
                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                          centrosome protein involved
                                                                                                                                                         Calarco P.D., Kirschner M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  54BA51C7404AC572 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 No.
                                                                                                                                                                                                                                                                                       update)
                                                                                                                                                                                                                                                                                                                             1920
                                                                                                                                                                                                                                                                        update)
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47;
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                                                  LUNG AND HEART
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   50;
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                                     REGION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1251;
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SIMILARITY:

STRONG,

TO HUMAN KENDRIN

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Matches
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Best Local :
                                                                                                                                                                                                                                                                                                               Gutierrez S., Diez B., Montenegro E., Martin J.F.;

"Characterization of the Cephalosporium acremonium pcbAB gene
encoding alpha-aminoadipyl-cysteninyl-vallne synthetase, a lar;
multidomain peptide synthetase: linkage to the pcbC gene as a
of early cephalosporin biosynthetic genes and evidence of mult
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-MAY-1992 (Rel. 22, Created)
01-MAY-1992 (Rel. 22, Last sequence update)
15-JUL-1998 (Rel. 36, Last annotation update)
DELTA-(L-ALPHA-AMINOADIPYL)-L-CYSTEINYL-D-VALINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1002
                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=91177827; PubMed=1706706; Gutierrez S., Diez B., Montenegro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CEPAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its
                                                                                            Cephalosporium acremonium.
                                                                                                                                        Chen V.J., Skatrud P.
                                                                                                                                                         MEDLINE=91168300; PubMed=2076552;
Hoskins J.A., O'Callaghan N., Queener S.W.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Cephalosporium acremonium (Acremonium chrysogenum)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1165 WNQKETL 1171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Coiled
                                                                                                                                                                                                                            PARTIAL SEQUENCE FROM N.A.,
                                                                                                                                                                                                                                                        J. Bacteriol. 173:2354-2365(1991).
[2]
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MGD;
                                                                                                               Gene disruption of the pcbAB gene encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                178
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Genet. 18:523-530(1990).
FUNCTION: EACH OF THE CONSTITUENT AMINO ACIDS OF THE TRIPEPTIDE BUNCT ARE ACTIVATED AS AMINOACYL-ADENYLATES WITH PEPTIDE BONDS FORMED THROUGH THE PARTICIPATION OF AMINO ACID THIOLESTER
                                                FUNCTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         _CEPAC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PGKKISPEEIERTRKTCKSSEQLLKLLSLWRIKNGDQDTLKGLMYALKHLKTSHFPKTVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LHRCVEREF-----RHRNEEMAQAMQKQQELLERLREESAAKDRLALE-LHTAKGLL
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42; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ascomycota; anamorphic
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22.5%;
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                                                                                                                                                                                                                            AND PARTIAL SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 83;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           POLY-PRO.
POLY-GLN.
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79;
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                                                                                                                 ACV synthetase
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INTERPRO; IPRO00255; ...
INTERPRO; IPRO01031; ...
INTERPRO; IPRO01242; ...
INTERPRO; IPR001242; ...
INTERPRO; IPR001242; ...
PFAM; PF00501; AMP-binding; 3.
PFAM; PF00975; Thioesterase; 1.
PFAM; PF00975; pp-binding; 3.
PFAM; PF00550; pp-binding; 3.
PROSITE; PS00012; PHOSPHOPANTETHEINE; 2.
PROSITE; PS00455; AMP_BINDING; 3.
PROSITE; PS00455; AMP_BINDING; 3.
PROSITE; PS00455; AMP_BINDING; 3.
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                     THSLRKTMRFLHSFTM 192
                                                                                                              QLLKLWKHQNRDQEMVKKIIQDIDLCESSVQRHLGHSNLTTEQLLALMESLPGKKISPEE 126
YHSLKNELS - - EAYTM
                                       DLAAIWGN-----ILSVPAQDIG-SESNFFRLGGHS-IACIQLIARVRQQLGQGITI!
                                                                                                                                     LSFLEKKLPRYMVPTRLVQLAQIPTNINGKADLRALPAVEVAVAPTHKQDGERGNQLI::
                                                                 IERTRKTCKSSEQLLKLLSLWRIKNGDQDTLKGLMYALKHLKTSHFPKT-
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234 1062
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PHOSPHOPANTETHEINE (BY SIMILA)
PHOSPHOPANTETHEINE (BY SIMILA)
THIOESTERASE (BY SIMILARITY).
WW: 4EE3CleB5EBEF9B7 CRC64;
                                                                                                                                                                                                                                                                                                ACYL CARRIER (ACP).
ACYL CARRIER (ACP).
ACYL CARRIER (ACP).
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DOMAIN 2 (CYSTEINE-ACTIVATING)
DOMAIN 3 (VALINE-ACTIVATING).
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(BY SIMILARITY)
(BY SIMILARITY)
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Search completed: January 27, 2001, 11:24:56 Job time: 138 sec

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GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.

OM protein - protein search, using sw model
Run on:
January 27, 2001, 11:22:37; Search time 25.38 Seconds (without alignments)
577.878 Million cell updates/sec
Title:
Perfect score: 1113
Sequence: 1113
Sequence: 1SGNREATOKCGIDVTLCEEA.......QKLFLEMIGNQVQSVKISCL 216
Doring table: BLOSUM62
Gapop 10.0, Gapext 0.5
Searched: 195891 seqs, 67900655 residues
Total number of hits satisfying chosen parameters: 195891
Minimum DB seq length: 0
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Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

PIR_66:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*

Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

					•																									:	z	Result	
	•29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	æ	7	σ	v	4	w	2	<u>_</u>		No.	1t	
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	7.5	7.5	7.6	7.6	7.6	7.7	7.7	7.7	7.8	7.8	7.8	7.8	7.9	7.9	7.9	7.9	7.9	8.0	8.0	8.1	8.1	8.2	8.2	8.2	8.3	8.5	8.5	8.6	9.0		Match	Query	•
	1226	451	812	764	229	2677	1837	1442	1142	4151	1215	823	1007	1225	1017	523	361	1388	710	463	833	1364	1208	901	1309	486	203	697	1574		Match Length DB		
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	151617	T21036	A53016	I51302	B69712	A38194	T41023	C82898	S59359	T13734	в72029	D70386	S48535	A56514	PC4035	T19684	I50691	T30335	T22360	C71665	T32289	T14900	T39068	JC7111	T39379	T21481	T14848	T37827	A38454		ID		
_		hypothetical prote	myosin heavy chain	myosin heavy chain	mutants block spor	desmoplakin I - hu	probable nuclear p		GIN4 protein - yea	groovin gene prote	helicase, Snf2/Rad	probable polyketid	rho-type GTPase-ac	chromokinesin - ch	cell-cycle-depende	hypothetical prote	basic-leucine zipp	KLP2 protein - Afr	hypothetical prote	chromosomal replic	hypothetical prote	condensin XCAP-D2	coiled coil protei	tetratricopeptide	sexual differentia	hypothetical prote	MADS-box protein d	hypothetical prote .	myosin MYO2 - yeas		Description		
	A; Accession: S71966	A; Reference number: S71966; MUID: 97051586	A;Title: Sequence of 29 kb around the PDR10	Yeast 12, 999-1004, 1996	R; Parle-McDermott, A.G.; Hand, N.J.; Gouldi	A; Experimental source: strain S288C		A; Residues: 677-1574 <gou></gou>	A; Molecule type: DNA	A; Accession: S67233	A; Reference number: S67233		R; Goulding, S.E.; Hand, N.J.; Parle-McDermo	A; Experimental source: strain S288C	A;Cross-references: EMBL:Z75234; GSPDB:GN0(A; Residues: 1-748 < PEW>	A; Molecule type: DNA	A; Accession: S67232	A; Reference number: S67213	submitted to the Protein Sequence Database,	R; Pearson, B.M.; Hernando, Y.; Kalogeropoul	A;Cross-references: EMBL:Z49821; NID:g11630	A; Residues: 677-1574 < PAR>	A; Molecule type: DNA	A; Accession: S62058	A; Reference number: S62058	A;Description: Sequence of 29 kilobases are	submitted to the EMBL Data Library, June 19	R; Parle, A.G.; Hand, N.J.; Goulding, S.G.;	A;Cross-references: EMBL:X90565; NID:g9408;	A; Residues: 1-748 < PEA>	A; Molecule type: DNA	A;Accession: S08339

45	44	43	42	41	40	39	38	37	36	35	34	ω	32	31	30
81.5	81.5	81.5	81.5	82	82	82	82.5	82.5	83	83	83	83	83	83.5	83.5
7.3	7.3	7.3	7.3	7.4	7.4	7.4	7.4	7.4	7.5	7.5	7.5	7.5	7.5	7.5	7.5
682	530	395	395	435	370	192	3450	1330	3712	1920	1252	1230	817	2018	1853
2	N	N	2	N	N	N	N	N	1	N	N	N	N	N	-
\$40459	T19365	G71811	B64709	S67205	в70223	S42955	T26963	A36373	YGCEVC	A53188	B42771	S56850	T25674	T34274	A46761
ribosomal protein	hypothetical prote	transcription term	transcript: term	probable new cane	conserved in whitet	viral infivity	hypothetical prote	hypothetical prote	alpha-amincadipyl-	pericentrin - mous	reticulocyte-bindi		hypothetical prote	hypothetic:l prote	myosin heavy chain

ALIGNMENTS

A;Accession: S62058 A;Molecule type: DNA A;Residues: 677-1574 <par> A;Roblecule type: DNA A;Residues: 677-1574 <par> A;Cross-references: EMBL:23982; NID:g1163062; PIDN:CAA89973.1; PID:: 1/3063 R;Pearson, B.M.; Hernando, Y.; Kalogeropoulos, A.; Schweizer, M. Submitted to the Protein Sequence Database, July 1996 A;Reference number: 567213 A;Accession: S67232 A;Molecule type: DNA A;Residues: 1-748 <pend 1-748="" 677-1574="" <gou="" <penda="" a;cross-references:="" a;residues:="" embl:275234;="" gspdb:gn00015;="" mips:yor326w=""> A;Cross-references: EMBL:275234; GSPDB:GN00015; MIPS:YOR326W A;Residues: 677-1574 <gou> A;Cross-references: EMBL:275234; GSPDB:GN00015; MIPS:YOR326W A;Experimental source: strain S288C R;Parle-McDermott, A.G.; Hand, N.J.; Goulding, S.E.; Wolfe, K.H. Yeast 12, 999-1004, 1996 A;Title: Sequence of 29 kb around the PDR10 locus on the right arm of Saccharomyces of A;Title: Sequence of 29 kb around the PDR10 locus on the right arm of Saccharomyces of A;Title: Sequence of 29 kb around the PDR10 locus on the right arm of Saccharomyces of A;Title: Sequence of 29 kb around the PDR10 locus on the right arm of Saccharomyces of A;Title: Sequence of 29 kb around the PDR10 locus on the right arm of Saccharomyces of A;Title: Sequence of 29 kb around the PDR10 locus on the right arm of Saccharomyces of A;Title: Sequence of 29 kb around the PDR10 locus on the right arm of Saccharomyces of A;Title: Sequence of 29 kb around the PDR10 locus on the right arm of Saccharomyces of A;Title: Sequence of 29 kb around the PDR10 locus on the right arm of Saccharomyces of A;Title: Sequence of 29 kb around the PDR10 locus on the right arm of Saccharomyces of A;Title: Sequence of 29 kb around the PDR10 locus on the right arm of Saccharomyces of A;Title: Sequence of 29 kb around the PDR10 locus on the right arm of Saccharomyces of A;Title: Sequence of Saccharomyces of A;Title: Sequence of Saccharomyces of A;Title: Sac</gou></pend></par></par>	A;Accession: A38454 A;Accession: A38454 A;Accession: A38454 A;Accession: A38454 A;Residues: 1-1574 <joh> A;Residues: 1-1574 <joh 1-748="" 1995="" <pra="" a.;="" a;accession:="" a;molecule="" a;recession:="" a;reference="" a;residues:="" august="" b.m.;="" data="" dna="" embl="" hernando,="" kalogeropoulos,="" library,="" m.="" number:="" r;pearson,="" s.s.;="" s58318="" s58339="" schweizer,="" submitted="" the="" to="" type:="" wolf,="" y.;=""> A;Residues: 1-748 <pra> A;Cross-references: EMBL:X90565; NID:g940836; PIDN:CAA62184.1; PID:g9; ~50 R;Parle, A.G.; Hand, N.J.; Goulding, S.G.; Wolfe, K.H. submitted to the EMBL Data Library, June 1995 A;Reference number: S62058 A;Reference number: S62058</pra></joh></joh></joh></joh></joh></joh>	RESULT 1 A38454 MyO2 - yeast (Saccharomyces cerevisiae) myosin MYO2 - yeast (Saccharomyces cerevisiae) N;Alternate names: protein O6167; protein YOR326w N;Contains: myosin ATPase (EC 3.6.1.32) C;Species: Saccharomyces cerevisiae C;Date: 31-Dec-1993 #sequence_revision 31-Dec-1993 #text_change 21-, ,) C;Accession: A38454; S58339; S62058; S67232; S67233; S71966; S72009 R;Johnston, G.C.; Prendergast, J.A.; Singer, R.A. J. Cell Biol. 113, 539-551, 1991 A;Title: The Saccharomyces cerevisiae MYO2 gene encodes an essential procession A;Reference number: A38454; MUID:91201404
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A;Note: the nucleotide sequence was submitted to the EMBL Data Library, June 1995 R;Pearson, B.M.; Hernando, Y.; Payne, J.; Wolf, S.S.; Kalogeropoulos, A.; Schweizer, M. Yeast 12, 1021-1031, 1996 A;Title: Sequencing of a 35.71 kb DNA segment on the right arm of yeast chromosome XV reak; Reference number: S71986; MUID:97051589 A;Accession: S72009 A;Status: nucleic arid rows.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Gene: SGD:MYO2; MIPS:YOR326w
A;Gene: SGD:MYO2; MIPS:YOR326w
A;Cross-references: SGD:S0005853; MIPS:YOR326w
A;Map position: 15R
C;Function:
A;Description: involved in vacuole inheritance; involved in polarized growth .
C;Superfamily: myosin MYO2; myosin motor domain homology
C;Keywords: actin binding; ATP; coiled coil; cytoskeleton; hydrolase; P-loop;
C;Keywords: actin binding; ATP: coiled coil; cytoskeleton; hydrolase; P-loop;
                                                                                 A; Residues: 1-697 <DEV>
A; Cross-references: EMBI
A; Experimental source: C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   73-769/Domain: myosin motor domain homology <AMOT>
164-171/Region: nucleotide-binding motif A (P-loop)
652-673/Region: actin binding *status predicted
F:782-926/Domain: neck *status predicted <NEC>
F:782-926/Domain: coiled coil *status predicted <COI>
F:942-1086/Domain: coiled coil *status predicted <COI>
F:1087-1574/Domain: carboxyl-terminal *status predicted
F:170/Binding site: ATP (Lys) *status predicted
F:102/Binding site: Cys *status predicted
F:692-702/Active site: Cys *status predicted
F:692-702/Active site: Cys *status predicted
                         A; Gene: SPDB:SP.
A; Map position:
                                                                                                                                                                                        A;Reference number: Z21737
A;Accession: T37827
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: DNA
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A; Residues: 677-1574 < PAW>
A; Cross-references: EMBL: Z.
                                                                                                                                                                                                                                                                               submitted to the EMBL Data Library, August 1997
A;Reference number: 771777
                                                                                                                                                                                                                                                                                                                                                                                    C;Date: 03-Dec-1999 #sequence_revision 03-Dec-1999 #text_change 03-Dec-1999
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         οy
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A; Residues: 1-748 <PI
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Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                   Species: Schizosaccharomyces pombe
                                                                                                                                                                                                                                                                                                                                                                                                                                       othetical protein SPAC17A5.12 - fission yeast (Schizosaccharomyces pombe)
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                                                          SPDB:SPAC17A5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KVNAESVERIKRRHSSQEQTFQLLKLWKHQNRDQEMVKKIIQDIDLCES---SVQRHLGH 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     nucleic acid sequence not shown; translation not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LKEEIARLQTAMSLGTVTTSV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LMYALKHLKTSHFPKTVTHSL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KENKEMTERIKELQVQVEESAKL-----QETLENMKKEHLIDIDNQKSKDMELQKTIEN 1012
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                                                                                                             source: strain
                                                                                                             EMBL: Z98849; PIDN: CAB11512.1; ce: strain 972h-; cosmid c17A5
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Pred. No. 8;
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                                                                                                                                      GSPDB:GN00066; SPDB:SPAC17A5.12
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                                                                                                                                                                                                                                                                                                                                  м. А. ;
                                                                                                                                                                                                                                                                                                                                  Wood,
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                                                  submitted to the EMBL Data A; Reference number: Z19429 A; Accession: T21481
                                                                                                                                                            hypothetical protein F28C6.1 - Caenorhabditis elegans C;Speckes: Caenorhabditis elegans C;Deckes: C-coct-1999 #sequence_revision 15-Oct-1999 #text_change 15-Oct. C;Accession: T21481
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A; Molecule
                         A; Status: preliminary; translated from GB/EMBL/DDB
                                                                                                                                   R; Burton,
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C; Superfamily:
C; Keywords: DNA
                                                                                                                                                                                                                                                                                                                                                                     A; Experimental source: C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R:Tandre, K.; Albert, V.A.; Sundas, A.; Engstroem, P. Plant Mol. Biol. 27, 69-78, 1995
A;Title: Conifer homologues to genes that control flo A;Reference number: S51934; MUID:95170009
A;Accession: T14848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MADS-box protein dal3 - Norway spruce C:Species: Picea abies (Norway spruce) C:Date: 20-Sep-1999 #sequence_revision C:Accession: T14848
                                                                                                                                                                                                                                                                                                                                                                                         A;Cross-references: EMBL:X79281; NID:g695689; PIDN:CAA55868.1; A;Experimental source: female cone
                                                                                                                                                                                                                                                                                                                                                      A; Gene:
                                                                                                                                                                                                                                                                                                                                                                                                                            A; Residues: 1-203 <TAN>
                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Status: preliminary;
                                                                                                                                                                                                                      Query Match
Best Local S
Matches 36
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                                                                     109 IANREERIKILESRORKMYGEELASCALSDLNLLESQVERGLRHIRARKTQILVAEIEE
                                                                                                                                                                                                                        Local Similarity hes 36; Conser
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                     PGK-KISPEEIERTRKTCKSSEQLLKLLSLWRI 149
KRKERISSEENAFHRKSL--SILCMRMVPFWQL
                                                                                                          HSSQEQTFQLLKLWKHQNRDQEMVKKIIQDIDLCESSVQRHLGHSNL-TTEQLLALMESI
                                                                                                                                                                                 EATQKCGIDVTLC----EEAFFRFAVPT--KIIPNWLSVLVDSLPGTKVNAESVERIKKR 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           YIDGKHRCEAAISSHSSESHSKRTTQQ----PKSTPNHTNIKVKSERLQHVRMAQQKAI
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LVDIIGEEKGHGESIRDKSMNDYYVKNMVRKAQVLEQLEKYQESLNIWKDLIADGQISKL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LVDSLPGTKVNAES------VERIKRRHSSQEQT---FQLLKLWKHQNRDQEMVKK 84
                                                                                                                                             ELSVLCDAEVALIVFSPRGKLYEFANPSMQKMLERYDKCSEGSNTTNTTKERDIQYLKRI 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LDEERSRLREPVQQIVNKW--KEGKESNLRALLASLDTILWPECRWQKVSLSELVLPKKV 649
                                                                                                                                                                                                                                                                                                                   DNA
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                                                                                                                                                                                                                                                                                                                 transcription factor squa; serum response A binding; transcription regulation
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                                                                                                                                                                                                                                        23.5%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     to genes that control floral MUID:95170009
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Pred. No.
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                                                                                                                                                                                                                                                                                                                                                                                                        PID: 9645690
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Query Match
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Score
95
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Length 697;
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A;Cross-references: EMBL:268315; PIDN:CAA92669.1; GSPDB:GN00020; CES+...28C6.1

A; Residues:

type: DNA

Library,

December 1995

1999

1-486 <WIL>

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A; Experimental source: c; C; Genetics:
A; Gene: CESP: F28C6.1
A; Map position: 2
A; Introns: 86/3; 276/2;
                                                                   , 0y
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sexual differentiation and meiosis protein ste20 .
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                                                                                                                                                                                                                                                                   A; Description: necessary
                                                                                                                                                                                                                                                                                                     A; Map position:
                                                                                                                                                                                                                                                                                                                          A;Gene: stel6;
                                                                                                                                                                                                                                                                                                                                                          A;Cross-references: EMBL:AJ223984; PIDN:CAA11758.1
                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule
                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Reference number: Z23064
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Description:
                                                                                                                                                                                                                                                                                                                                                                                                                             A; Accession: T46557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Cross-references: EMBL:Z54140; PIDN:CAA90815.1; GSPDB:GN00066; SPDB:SPBC12C2.02c ;Experimental source: strain 972h-; cosmid c12C2; Hilti, N.; Baumann, D.; Edenharter, E.; Stalder, M.; Schweingruber, M.E. submitted to the EMBL Data Library, February 1998; Description: A new gene, ste20, in fission yeast Schizosaccharomyces pombe - necessary.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  and pH regulation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Reference number:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Accession: T39379; T46557
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Best Local
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91
                                                                     45
                                                                                                                                                                            Local Similarity
les 57; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 72
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                                                                                                                                        1 SGNREATOKCGIDVTLCEEAFFRFAVPTKIIPNWLSVLVDSLP------
                                                                                                                                                                                                                                                                                                                                                                                                          preliminary; translated from GB/EMBL/DDBJ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FFRFAVPTKIIPNWLSVLVDS-LP--GTKVNAE-SVERIKRR-----HSSQEQTFQLLKL 71
                                 TSVLQSIESLNRVKFHSATQPFSQTTSL--LFKEQKTDGSFRGQRQVEHVKLKMGMQIDD
                                                                 TKV--NAESVERIKRRHSSQ--EQTFQLLKLWKHQ-----NRDQEMVK-KIIQDID- 90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PIDAIALEMLEKLIFNNKNLDICLRILKNTNKTITRVIKTLEVRQPKITGQKEKLKGNSL
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                                                                                                                                                                                                                                                                                                                      SPBC12C2.02c;
·LCESSVQRHLGHSNLTTEQLLALMESLPGKKISPEEIERTRKTCKSSEQLL---
                                                                                                                                                                            Conservative
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                                                                                                                                                                                                                                                                   for sexual development and also responsible
                                                                                                                                                                                            8.3%;
24.5%;
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25.1%;
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                                                                                                                                                                                            Score 92;
Pred. No.
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                                                                                                        ----LLPIHLGAKIQSLPSLFNMASQFTAEDRFVA
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r 1995
                                                                                                                                                                                                               DB 2;
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                                                                                                                                                                            77;
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                                                                                                                                                                                                           Length 1309;
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                                                                                                                                                                            68;
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                                                                                                                                          ----G
                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                   for
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141
                                 698
                                                                                                      640
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             332
                                                                                                                                                                                                                                                                   sensitivity,
                                                                                                                                                                            11;
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34 WL----SVLVDSLPGTKVNAESVERIKRRHSSQEQTFQLLKLWKHQNRDQEMVKKITQ: | | : | : | : | -| | -| | : | : |

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                                                                                    A; Gene: SPDB:SP
A; Map position:
                                                                                                                                                                                                                  A; Reference number: A; Accession: T39068
                                                                                                                                                                                                                                                  R;Murphy, L.; Harris, D.; Barrell, B.G.; Rajandream, submitted to the EMBL Data Library, August 1997
                                                                                                                                                                                                                                                                                               C;Species: Schizosaccharomyces pombe
C;Date: 03-Dec:1999 #sequence_revision 03-Dec-1999 #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q
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C; Keywords: differentiation; epidermis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tetratricopeptide repeat-containing protein - mouse N;Alternate names: TPIS protein C;Species: Mus musculus (house mouse) C;Date: 03-Dec-1999 #sequence_revision 03-Dec-1999 #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                    A; Molecule type: DNA
                                                                                                                                                                                                                                                                                   C; Accession: T39068
                                                                                                                                                                                                                                                                                                                                 coiled coil protein - fission yeast (Schizosaccharomyces pombe)
                                                                                                                                                                                                                                                                                                                                                   T39068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Reference number: A; Accession: JC7111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Title: A tetratricopeptide repeat-containing A; Reference number: JC7111; MUID:99458625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
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                                                                                                                                  A; Experimental source:
                                                                                                                                                  A; Cross-references: EMBL: Z81317;
                                                                                                                                                                                                  A; Status:
                                                                                                                                                                                                                                                                                                                                                                    RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Cross-references: GB: AF181252;
A; Experimental source: testis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Biochem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C; Accession: JC7111
                                                                                                                                                                   A; Residues: 1-1208 <MUR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Residues:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R; Takaishi, M.; Huh, N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gene: Lpis
                                                                                                                     Genetics
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     Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     756 KPFSNRFSSIQNTKPNQKFIKVGCLVFRTLLANPEGVKYLSESKVIKQIAESL 808
                  Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18 EEAFFRE-----AVPTKIIPN--------WLSVLVDSLPGTKVNAESVERIKRRHS:
                                                                                    SPDB:SPAC6G9.06c
osition: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Biophys.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QEQTFQLLKLWKHQNRDQEMV---KKIIQ---DIDLCE---SSVQRHLGHSNLTTEQL(A. 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EEAVMYYTRSLSALPTAIAYNNRAQAEIKLQRWSSALEDCEKALELDPGNVKALLRR^
                                                                                                                                                                                                preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                      ---QTKGKRMVIEEVENS 351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SHERSMLAETNVLATKNYQKWRWDTLVQIME---GPLLSPKRIDETLRTTKEMRRLLA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1-901 <TAK>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                  Similarity
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     Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    YKHQNKLQEAVDDLRKVLQVEPDNDLAKKTLSEVERDLKNSEPVSEL
                                                                                                                                  strain
                  8.2%;
25.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8.2%;
27.5%;
                                                                                                                                  972h-;
 32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23;
 Score 91.5; [
Pred. No. 27;
32; Mismatches
                                                                                                                                  PIDN:CAB03608.1;
2h-; cosmid c6G9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 91.5; [
Pred. No. 19;
23; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NID:g6272679;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      --DTLKGLMYALKHLKTSHFPKTVTHSL 180
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                                    ВG
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   67;
                                  2;
                                                                                                                                                  GSPDB:GN00066; SPDt., 1 AC6G9.06c
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                                                                                                                                                                                                                                                                  M.A.; Connor, R.L.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                  Length 1208;
   Indels
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   63;
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hypothetical protein F42G2.6 - Caenorhabditis elegans C;Species: Caenorhabditis elegans C;Date: 29-Oct-1999 #sequence_revision 29-Oct-1999 #t. C;Accession: T32289
A;Molecule type: DNA
A;Residues: 1-833 <SCH>
A;Cross-references: EMBL:AF024499; PIDN:AAB70358.1; GSPDB:GN00020; CESP:F42G2.
A;Experimental source: strain Bristol N2; clone F42G2
                                                                                                                                 submitted to the EMBL Data Library, Septem A; Description: The sequence of C. elegans A; Reference number: 221146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          R;Kimura, K.; Hirano, M.; Kobayashi, R.; Hirano, T. Science 282, 487-490, 1998
A;Title: Phosphorylation and activation of 13S condensin Reference number: Z18257; MUID:98447791
Accession: T14900
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-1364 <KIM>
                                                                                    A; Status: preliminary; translated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C:Species: Xenopus laevis (Atrican clawed rrog)
C:Date: 20-Sep-1999 #sequence_revision 20-Sep-1999 #text_change 11-May-2000
                                                                                                               A; Reference number: A; Accession: T32289
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    condensin XCAP-D2 chain - African clawed frog
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C; Accession: T14900
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Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          184
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                                                                                                                                                                                                                                                                                                                                                                                                         515
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         276 REIGQKCSQDLSRESSGFKAFATFLTELAERIPAIMMPS-ISVLLDYLDGENYMMRNSVL 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            76
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Match 8.2%;
Local Similarity 20.8%;
ses 54; Conservative 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4
                                                                                                                                                                                                                                                                                                                                                                                                      LILLRKTSYKNSIRLTQKGI 534
                                                                                                                                                                                                                                                                                                                                                                                                                                               LKLLSLWRIKNGDQDTLKGL 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LSRFQSVVTLVVGRLFDKSVNVCKNAIQLLASFLANNPFTCKLSSVDLKVPLEKETKKLK 454
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMREKYQGPKPVVVISPEEEWEAMLPEVLEAFKILQQESKEEEDIETEEIESSQHLREQI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ALMESLPGKK----ISPE----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LKLLSLW-----RIKNGDQDT------LKGLMYALKHLKTSHFPKTVTHSLRKT 183
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REATQKCGIDVTLCEEAFFRFA------VPTKIIPNWLSVLVDSLPGTK------
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Pred. No. 34;
34; Mismatches
                                                                                          from GB/EMBL/DDBJ
                                                                                                                                                                            September 1997
                                                                                                                                                                                                                                              29-Oct-1999 #text_change 29-Oct-1999
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                                                                                                                                                          F42G2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels 104;
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C71665
                                                                                                             C; Accession: T22360 R; White, S.
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      A; Molecule type: DNA
                        A;Status: preliminary;
                                                                                                                                                                                                                          T22360
                                                                                                                                                                                                                                              RESULT
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C; Superfamily: repl
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멍 Ş Ъ Qy В Qy Вр Š

translated

from GB/EMBL/DDBJ

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hypothetical protein F47G4.2 - Caenorhabditis elegans (C;Species: Caenorhabditis elegans (C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 15-Oct-1999
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R;Andersson, S.G.E; Zomorodipour, A.; Andersson, J.O.; Sicheritz-Pon' n, T.;
Nature 396, 133-140, 1998
A;Title: The genome sequence of Rickettsia prowazekii and the origin of mitoch
A;Reference number: A71630; MUID:99039499
submitted to the EMBL Data Library, A; Reference number: Z19553
A; Accession: T22360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C;Species: Rickettsia prowazekii
C;Date: 21-Nov-1998 #sequence_revision 21-Nov-1998
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A; Introns: 317/1; 335/1; 362/3; 781/1
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A; Residues: 1-463 < AND>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           159 GLMYALKHLKTSHFPKTVTHSLRKTM 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    107 TEQLLALMESLPGKKISPEEIER-TRKTCKSSEQLL---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  237 CGKDSTQ-EEFFHTF---NTLIDNNRQMVISCDRSPSDLDNIE--DRIKSRLGWGLVALV 290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          59 HSSQEQTFQLLKLWKHQNRDQEM-----VKKIIQDIDLCESSVQRHLGHSNLf 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10 CGIDVTLCEEAFFRFAVPTKIIPNWLSVLV--DSLPGTKVNAESVERIKRR-----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HST---TYE-LRLGILESKIEQMNVKIPKDVINFLASKIVSNVRELEGALNKVIAHSNFT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               --MYSSRRLREVARPRQIAMYLSKTL 413
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29.7%;
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Pred. No. 21;
17; Mismatches
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Pred. No.
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12;
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R;Boleti, H.; Karsenti, E.; Vernos, I. Cell 84, 49-59, 1996
A;Title: Xklp2, a new Xenopus centrosomal A;Reference number: Z20827; MUID:96140639
A;Accession: T30335
RESULT
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C;Superfamily: unassigned kinesin-related proteins; kinesin motor domain homology
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C;Species: Xenopus laevis (African clawed frog)
C;Date: 22-Oct-1999 #sequence_revision 22-Oct-1999 #text_change 02-Jun-2000
C;Accession: T30335
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A;Cross-references: EMBL:Z99171; PIDN:CAB16314.1; GSPDB:GN00019; CESP:F47G4
A;Experimental source: clone F47G4
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Best Local S
Matches 60
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Residues: 1-1388 <BOL>
;Cross-references: EMBL:X94082; NID:g1129172; PID:e213754; PIDN:CAA63826.1
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                                                                          514 RVAKYALENHSLREENKRLHSLQSVKRAQEVTAQMI 549
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                                                                                                                                                                                                                                                                                                       343 PGSKCFGETLSTL-----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         199 WYDIRELFALKLLNVLDLSMHSTHHARRNMQRFLDCKQV--LPELRFLECSGN
                                                                                                                                                                                                                                                                                                                                                                          Local Similarity 22.7 hes 48; Conservative
                                                                                                                                                                                                                                                                    92
                                                                                                                                                                                                                                                                                                                                      43 PGTKVNAESVERIKRRHSSQEQTFQLLKLWKHQ---NRD-----QEMVKKIIQDIDL
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                       13
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                                                                                                                                                                                                                                                                CES-----SVQR------HLGHSNLTTEQLLALMESLPGKKISPEEIERTRKTCKSS 137
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                                                                                                                KTV----THSLRKTMRFLHSFTMYRLYQKLFLEMI
                                                                                                                                                   EKFIQSNKMIVKFREDHISRLEKAHKEGRISLSNNEQDDFIAELKEEIRTLKE-QVEHHP
                                                                                                                                                                                       EQLL - - - KLLSLWR - - -
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25.8%;
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                                                                                                                                                                                                                                                                                                                                                                                                Score 88.5;
Pred. No. 54;
                                                                                                                                                                                                                                                                                                                                                                                                  Pred.
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Pred. No. 2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               basic-leucine zipper-like protein - chicken (fragment)
C;Species: Gallus gallus (chicken)
C;Date: 13-Sep-1996 #sequence_revision 13-Sep-1996 #text_change
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              submitted to the EMBL Data Library, A; Reference number: Z19162
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                                                                                                                                                                                                                                                                                                                                                                                                   A;Cross-references: EMBL:Z68159; PIDN:CAA92288.1; GSPDB:GN00022; CESP:::\dD9.5
                                                                                                                                                                                                                                                                                                                                                                                                                      A; Molecule type: DNA
A; Residues: 1-523 <W
                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Reference number: A; Accession: T19684
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: mRNA
A; Residues: 1-361 <WA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Proc. Natl. Acad. Sci. U.S.A. 91, 1351-1355, 1994
A;Title: A developmentally regulated basic-leucine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R; Wang, S.Z.; Adler, R.
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Best Local
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Best Local Similarity
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   355
                                  134 CKSSEQLLKLLSLWRIKNGDQD----TLK---GLMYALKHLKTSHFPKTVTHSLRKTM
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           141 KCALKYLLGE-----LVSSKVQE---SKLESSLQQSKTNCSDIQKMLIEERNHATEM 5 191
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     192 EFQNQLLLQEQQHQQEVLYLLSQ----FQQKEAPGKGVEDSLSEQEKQMQERL---KFQE 244
                                                                                                                                                                     75
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                                                                        NLGNLEMNFETVYQDLQTANDNMEK----YKSSESERIQKLLEEQKAEILKEEEIKRK:
                                                                                                        QNRDQEM-VKKIIQDIDLCESSVQRHLGHSNLTTEQLLALMESLPGKKISPEEIERTRK.
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-ELSEQIKKIQELKDRQNVEKDREIEDLKEKIGRKSVLSSTEVEKMAKIFDENYQKIV
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Pred. No. 15;
15; Mismatches
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Pred. No. 12;
30; Mismatches
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R:Li, Q.; Ke, Y.; Kapp, J.A.; Fertig, N.; Medsger Jr., T.A.; Joshi, H.C. Blochem. Blophys. Res. Commun. 212, 220-228, 1995
A;Title: A novel cell-cycle-dependent 350-kDa nuclear protein: C-terminal domain suffici A;Reference number: PC4035; MUID:95336446
A;Accession: PC4035
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A;Residues: 1-1017 <LIQ>
A;Residues: 1-1017 <LIQ>
A;Cross-references: GB:U25725; NID:g818866; PIDN:AAA86889.1; PID:g818867
A;Cross-references: GB:U25725; NID:g818866; PIDN:AAA86889.1; PID:g818867
A;Note: repeat 15-160 and 200-340
C;Comment: This protein contains a coiled-coil and a globular domain at the carboxy-term C;Keywords: nucleoprotein; phosphoteini a coiled-coil and a globular domain at the carboxy-term C;Keywords: nucleoprotein; phosphoteini (Phr) (covalent) (by calmodulin-dependent kinase II) #statt F;825,826,838/Binding site: phosphate (Thr) (covalent) (by cAMP-dependent kinase) #status pr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cell-cycle-dependent 350K nuclear protein - human (fragment)
C;Species: Homo sapiens (man)
C;Date: 08-Aug-1995 #sequence_revision 19-Oct-1995 #text_change 21-Jul-2000
C;Accession: PC4035
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414 ALNAGPMYNLQENL 427
543 -----SGEKNRLAGELQLLLEEIKSSKDQLKELTLENSELKKSLDCMH 585
                                                                     143 LLSLWRIKNGDQDTLKG-LMYALKHLKTSHFP-KTVT---HSLRKTMRFLH 188
                                                                                                                                          485 TLEVLQSSYKNLENELELTKMDKMSFVEKVNKMTAKETELQREMHEMAQKTAELQEEL-- 542
                                                                                                                                                                                                                                                                             425 EEISRLKNQIQDQEQLVSKLSQVEGEHQLWKEQNLELRNLTVELEQKIQVLQSKNASLQD 484
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                                                                                                                                                                                      -IDLCESSVQRHLGHSNLTTEQLLALMESLPGKKISPEEIER----TRKTCKSSEQLLK 142
                                                                                                                                                                                                                                                                                                                                                                                                                    7.9%; Score 88; DB 2; Length 1017; 23.4%; Pred. No. 41; ative 34; Mismatches 55; Indels
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Search completed: January 27, 2001, 11:23:12 Job time: 35 sec

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Database
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Maximum Match 100%
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                                     /SIDS1/gcgdata/geneseq/geneseqp/AA1999.DAT:*
/SIDS1/gcgdata/geneseq/geneseqp/AA1990.DAT:*
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

_	Result No.	Score	Query Match	Query Match Length DB	DB	ID	Description
	1	1113	100.0	401	18	W38344	Mouse osteoprotege
	2	1073	96.4	208	20	W89231	Mouse osteoprotege
	ω	1069	96.0	401	18	W38343	Rat osteoprotegeri
	4	1029	92.5	208	20	W89230	Rat osteoprotegeri
	ر.	977	87.8	360	17	R99936	Mutated OCIF, OCIF
	6	977	87.8	380	17	R99924	Mature osteoclasto
	7	977	87.8	391	19	W53238	Human OCIF genome
	8	977	87.8	401	17	R99925	Full length osteod
٠	9	977	87.8	401	19	W53239	Human OCIF genome
	10	977	87.8	401	20	Y05742	Tumour necrosis fa
	11	977	87.8	401	20	W95030	Tumour necrosis fa
	12	977	87.8	401	20	W83926	Human FTHMA-070 pr
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45	44	43	42	41	40	39	3 8	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13
86	88	88	89	91.5	100	416	446.5	558.5	569.5	592	621	695.5	749	779.5	833	929	931	932	946	949	960	962	964	964	967	967	967	967	969	969	972	972
7.7			٠	٠		7.	0	0	1	ω	5	2	7.	0.	.4	ω.	ω.	ω	5	5	6.	6.		6.	6.	6.	6.	6.	7.	7.	87.3	7.
1752	2482	2482	3248	228	590	272	311	349	326	321	327	366	351	390	397	395	393	417	208	420	360	401	401	399	401	401	401	359	401	401	401	359
20	19	16	17	20	21	17	20	20	17	17	17	20	17	17	20	19	17	20	20	20	17	17	17	17	17	17	17	17	21	18	19	17
Y07031	W23996	R72826	R99795	Y25896	Y83089	R99944	W89229	W83928	R99940	R99949	R99941	W89228	R99943	R99357	W89227	W57636	R99948	W89226	W89232	W89224	R99938	R99934	R99933	R99942	R99931	R99935	R99932	R99939	Y43400	834	76	R99937
Breast concer asso	am	Human mitosin. Ho	Kinetochore protei	'Human serrored pro		(1	Tumour necrosis ta	THMA - 07	S130		Mutated CCIF, OCIF	Ŀ	Mutated (*)[F, CCIF	Human tun our necre	Tumour necrosis fa	-		Tumour necrosis fa	C	=	(413)	OC [F,	G. LE,	(FIS)	, 311; ;	(A1,A)	0C IF,	Mutated (CII, OCIF	Osteoprotearin pro		3 × 15	MutatedF, OCIF

ALIGNMENTS

RESULT W38344 W38344; W38344 standard; Protein; 401 AA Mouse osteoprotegerin. 20-APR-1998 (first entry)

CDS Osteoprotegerin; antibody; diagnosis; affinity purification; recombinant production; transgenic animal; treatment; prevention; antisense oligonucleotide; probe; detection; screening; mouse; bone disease; osteoporosis; Paget's disease; hypercalcaemia; hyperparathyroidism; rheumatoid arthritis; osteomyelitis; osteolytic metastasis; periodontal bone loss; bone necrosis; Mus sp. osteopaenia; murine Location/Qualifiers 90..1295

DE19654610-A1

/product= osteoprotegerin

/*tag=

20-DEC-1996; 26-JUN-1997. 96DE-1054610

03-SEP-1996; 22-DEC-1995; 96US-0706945 95US-0577788

(AMGE-) AMGEN INC.

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Matches 216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The present sequence is mouse osteoprotegerin (OPG). Anti-OPG antibodies can be used in OPG diagnostic assays, and as affinity purification materials. The OPG CDNA can be used to express recombinant OPG and to generate transgenic animals. It can also be used to regulate the level of OPG in mammals, specifically to increase OPG levels, however the use of antisense sequences is also contemplated. Fragments of the CDNA can be used as probes to
 01-MAY-1997;
                                                                                                                                                 OPG;
                                                                                                                                                                                                                                                                       W89231 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          detect OPG expressing cells and tissue, and to screen cDNA libraries for related sequences. OPG can be used to treat or prevent bone diseases, specifically excessive bone loss, e.g. osteoporosis, Paget's disease, hypercalcaemia, hyperparathyroidism, rheumatoid arthritis, osteomyelitis, hyperparathyroidism, rheumatoid arthritis, osteomyelitis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nucleic acid encoding osteoprotegerin - useful for treatment diseases involving excessive bone loss, e.g. osteoporosis {\bf r}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     N-PSDB;
                          29-APR-1998;
                                                      05-NOV-1998
                                                                                                                                                                                      Mouse osteoprotegerin dimerisation domain
                                                                                                                                                                                                                  04-MAR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Boyle WJ,
                                                                                WO9849305-A1
                                                                                                                                   inflammation;
                                                                                                                                                             Tumour necrosis factor receptor 1; TNFR-1; inhibitor; osteoprotegerin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     osteopaenia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              osteolytic metastases, periodontal bone loss, bone necrosis and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim
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                                                                                                                                                                                                                                                                                                                                                                                        chimeric;
                                                                                                                                                                                                                                                                                                                                      rktmrflhsftmyrlyqklflemignqvqsvkiscl
                                                                                                                                                                                                                                                                                                                                                                                                                                                             SQEQTFQLLKLWKHQNRDQEMVKKIIQDIDLCESSVQRHLGHSNLTTEQLLALMESLPGK 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                sqeqtfqllklwkhqnrdqemvkkiiqdidlcessvqrhlghsnltteqllalmeslpgk
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
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                                                                                                                                                                                                                  (first entry)
                                                                                                                                   apoptosis
                           98WO-US08631
                                                                                                                                                 fusion; dimerisation
                                                                                                                                                                                                                                                                      Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%; Score 1113; DB 18; 100.0%; Pred. No. 6.6e-107;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  acid encoding A1; (3) an expression vector comprising the nucleic acid sequence; and (4) a host cell transformed or transfected with the expression vector so that the nucleic acid is expressible. The product from the present invention are useful to treat a variety of disorders including those related to receptor binding. Compositions comprising tumour necrosis factor (TNF)/OPG and TNF receptor (TNFR)/OPG Chimeras
                                                         osteolytic metastasis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The present invention describes a chimeric polypeptide (A1), comprise an osteoprotegerin (OPG) dimerisation domain fused to a heterologous amino acid sequence. Also described are: (1) a multimer polypeptide comprising covalently associated A1 monomers; (2) an isolated nucleic
                                          osteopaenia.
                                                                         hyperparathyroidism;
                                                                                          bone
                                                                                                     antisense oligonucleotide; probe;
                                                                                                                  Rat; osteoprotegerin; antibody; diagnosis; affinity purification recombinant production; transgenic animal; treatment; prevention
                                                                                                                                                                  Rat osteoprotegerin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        chimeras are also useful for detecting molecules which interact with fused heterologous sequences to identify potential new receptors and ligands. The present sequence represents mouse OPG dimerisation doma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       are used to treat TNF and TNFR-mediated disorders such as inflammation autoimmune diseases and disorders related to excessive apoptosis. The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Disclosure; Fig 1; 92pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New chimeric osteoprotegerin polypeptides - contain the osteoprotegerin dimerisation domain and a heterologous useful to treat TNF and TNFR-mediated disorders
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KCGIDVTLCEEAFFRFAVPTKIIPNWLSVLVDSLPGTKVNAESVERIKRRHSSQEQTFQL
                                                                                                                                                                                                                                                            standard;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                (first
                                                                       gonucleotide; probe; detection; screening;
  osteoporosis; Paget's disease; hypercalcaem
  oldism; rheumatoid arthritis; osteomyelitis;
                                                                                                                                                                                                                                                            Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  96.4%;
                                                         periodontal bone loss; bone
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Pred. No. 3.6e-103;
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                                                                                       hypercalcaemia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 208;
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                                                            necrosis;
                                                                                                                     prevention;
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Tumour necrosis factor receptor 1; TNFR-1; inhibitor; osteoprotegerin; OPG; chimeric; fusion; dimerisation domain; autoimmune disease; inflammation; apoptosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The present sequence is rat osteoprotegerin (OPG). Anti-OPG antibodies can be used in OPG diagnostic assays, and as affinity purification materials. The OPG CDNA can be used to express recombinant OPG and to generate transgenic animals. It can also be used to regulate the level of OPG in mammals, specifically to increase OPG levels, however the use of antisense sequences is also contemplated. Fragments of the CDNA can be used as probes to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              detect OPG expressing cells and tissue, and to screen cDNA libraries for related sequences. OPG can be used to treat or prevent bone diseases, specifically excessive bone loss, e.g. osteoporosis, Paget's disease, hypercalcaemia, hyperparathyroidism, rheumatoid arthritis, osteomyelitis, osteolytic metastases, periodontal bone loss, bone necrosis and
                                                        Rat osteoprotegerin dimerisation domain.
                                                                                      04-MAR-1999
                                                                                                                    W89230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 23; Pages 102-104; 182pp; German
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nucleic acid encoding osteoprotegerin - useful for treatment of diseases involving excessive bone loss, e.g. osteoporosis {\bf r}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI;
                                                                                                                                            W89230 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    osteopaenia.
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22-DEC-1995;
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                                                                                                                                                                                                                                                                                                                            sqeqtfqllklwkhqnrdqemvkkiiqdidlcessvqrhighanltteqlrilmeslpgk\\
                                                                                                                                                                                                                                                                                                                                           SOEQTFQLLKLWKHQNRDQEMVKKIIQDIDLCESSYQRHLGHSNLTTEQLLALMESLPGK 120
                                                                                                                                                                                                                                                                                                                                                                                       sgnreatqncgidvtlceeaffrfavptkiipnwlsvlvdslpgtkvnaesverikrrhs 245
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                                                                                                                                                                                                                                                                        kispdeiertrktckpseqllkllslwrikngdqdtlkglmyalkhlkayhfpktvths1
                                                                                                                                                                                                                                                                                                                                                                                                                                                  206;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          401 AA;
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                                                                                   (first entry)
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95US-0577788
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95.4%;
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                                                                                                                                             208 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 1069; DB 18;
Pred. No. 2.3e-102;
4; Mismatches 6;
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amino acid sequence. Also described are: (1) a multimer polypeptide comprising covalently associated Al monomers; (2) an isolated nucleic acid acid encoding Al; (3) an expression vector comprising the nucleic acid sequence; and (4) a host cell transformed or transfected with the expression vector so that the nucleic acid is expressible. The product from the present invention are useful to treat a variety of discribers including those related to receptor binding. Compositions comprising tumour necrosis factor (TNF)/OPG and TNF receptor (TNFR)/OPG chimeras are used to treat TNF and TNFR-mediated disorders such as inflammation, autoimmune diseases and disorders related to excessive apoptosis. The fused heterologous sequences to identify potential new receptors and invance the receptors and the receptors of the present securions.
Sequence
                                                                                                                                                                                                                                                                                                                                                                      New chimeric osteoprotegerin polypeptides - contain the osteoprotegerin dimerisation domain and a heterologous useful to treat TNF and TNFR-mediated disorders
                                                                                                                                                                                                                                                                           The present invention describes a chimeric polypeptide (A1), come 4.5 an osteoprotegerin (OPG) dimerisation domain fused to a heterologous
                                                                                                                                                                                                                                                                                                                                    Disclosure; Fig 1; 92pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 1999-034661/03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-MAY-1997;
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                               The present sequence represents rat
 208
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                                                                                                                                                                                                                                                                                                                                                                                                             contain the
                                    OPG dimerisation domain
                                                                                                                                                                                                                                                                                                                                                                                            sequence
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Query Match Best Local Matches 10 CGIDVTLCEEAFFRFAVPTKIIPNWLSVLVDSLPGTKVNAESVERIKRRHSSQEQTF(N Similarity Conservative 92.5%; Score 1029; DB 20 Pred. No. 1.3e-98; 4; Mismatches 20; 5; Length Indels 208; 0; Sch

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 $\tt cgidvtlcee affr favptkiip nwlsvlvdslpgtkvnaes verikrrhs sqeqtfq.\\$

62 klwkhqnrdqemvkkiiqdidlcessvqrhighanltteqlrilmeslpgkkispdeic 70 KLWKHQNRDQEMYKKIIQDIDLCESSYQRHLGHSNLTTEQLLALMESLPGKKISPEETI:

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B Qy 182 190 FTMYRLYQKLFLEMIGNQVQSVKISCL ftmyrlyqklflemignqvqsvkiscl 216

В Qy Вb Qy 뫄

R99936 R99936 standard; G Protein; 360 A

XEXTXXX Mutated OCIF, OCIF-DCR1 23-APR-1997

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Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                         Matches 184;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       This sequence represents a mutated version of the full length osteoclastogenesis inhibitory factor (OCIP) of the invention. This sequence represents OCIF-DCR1 in which amino acids 2-42 of the mature OCIF protein are deleted. The OCIF of the invention has a molecular weight by SDS-PAGE of 60 kD under reducing conditions and 120 kD under non-reducing conditions. The protein is adsorbed onto cation-exchangers or heparin and its activity is lowered after 10 mins at 70 deg.C. OCIF is useful in the control of bone resorption and therefore in the treatment and prevention of disorders of bone resorption, e.g.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Osteoclastogenesis osteoporosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 44; Page 105-107; 183pp; Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       {\tt DNA} encoding osteoclastogenesis inhibitory factor protein - useful for bone resorption control, esp. treatment of osteoporosis
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Nakagawa N, Shima N,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Goto M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21-JUL-1995;
20-FEB-1995;
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                                                                                                                                                                                                                                                                                                                                                                                                                                         osteoporosis.
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                                                                           265
                                                                                                                                                      205
                                                                                                                                                                                                                         145 sgnsestqkcgidvtlceeaffrfavptkftpnwlsvlvdnlpgtkvnaesverikrqhs
325 kktirflhsftmyklyqklflemignqvqsvkiscl
                 121
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                                                                                                              KISPEEIERTRKTCKSSEQLLKLLSLWRIKNGDQDTLKGLMYALKHLKTSHFPKTVTHSL
                                                                                                                                                sqeqtfqllklwkhqnkdqdivkkiiqdidlcensvqrhighanltfeqlrslmeslpgk
                                                                                                                                                                        SQEQTFQLLKLWKHQNRDQEMVKKIIQDIDLCESSVQRHLGHSNLTTEQLLALMESLPGK 120
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                                                                         T33166
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95JP-0054977.
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22..360
/note= "
22..23
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        inhibitory factor; OCIF; heparin; bone resorption
                                                                                                                                                                                                                                                                                                                       87.8%;
85.2%;
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Tsuda E, Ue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "Signal peptide"
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                                                                                                                                                                                                                                                                                                         19;
                                                                                                                                                                                                                                                                                                                       Score 977; DB 17;
Pred. No. 6.4e-93;
                                                                                                                                                                                                                                                                                                       Mismatches
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a M, Yano
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Yasuda H;
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RESULT R99924

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W53238 standard; Protein; 391

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Best Local Similarity
                                                                                                                                                                                                                                                                                                This sequence represents the mature osteoclastogenesis inhibitory factor (OCIF) of the invention. The OCIF has a molecular weight by SDS-PAGE of 60 kD under reducing conditions and 120 kD under non-reducing conditions. The protein is adsorbed onto cation exchangers
                                                                                                                                                                                                                                                       or heparin and its activity is lowered after 10 mins at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 90 deg.C. occurs useful in the control of bone resorption and therefore in the treatment and prevention of disorders of bone resorption, e.g.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Osteoclastogenesis inhibitory factor; OCIF; heparin; osteoporosis.
                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                osteoporosis.
                                                                                                                                                                                                                                                                                                                                                     Claim 6; Page 62-64; 183pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                         DNA encoding osteoclastogenesis inhibitory factor protein for bone resorption control, esp. treatment of osteoporosis
                                                                                                                                                                                                                                                                                                                                                                                                         N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 1996-402320/40
N-PSDB; T36685.
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Nakagawa N, Shima
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mature osteoclastogenesis inhibitory factor
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20-FEB-1995;
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285
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                                                                                                                                         1 SGNREATQKCGIDVTLCEEAFFRFAVPTKIIPNWLSVLVDSLPGTKVNAESVERIKRRHS
                                         sgnsestqkcgidvtlceeaffrfavptkftpnwlsvlvdnlpgtkvnaesverikrqhs
                                                                                                                                                                         184;
                                                                                                                                                                                                                            380 AA;
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95JP-0054977.
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85.2%;
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Tsuda E, Ue
                                                                                                                                                                        19;
                                                                                                                                                                                  Score 977; DB 17; Pred. No. 6.9e-93;
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la M, Yano
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Yasuda H;
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Human OCIF genome 15-JUL-1998 W53238;

DNA-2 protein

(first entry)

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Best Local
                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                            The present sequence represents human OCIF genome DNA protein which is shown in the present invention. The present invention describes: (1) a method of inhibiting the formation of osteoclasts and/or antipyretic proteins, which have the following characteristics: (1) MW determined by SDS-PAGE of approximately 60 kDa under reducing conditions, and 60 kDa and 120 kDa under non-reducing conditions; (ii) 401 aa sequence (III) (see W5329); (iii) affinity to cation exchangers and heparin; (iv) its osteoclast formation inhibiting activity reduced by heating at 70 degrees Celsius for 10 minutes or 56 degrees Celsius for 30 minutes, and (v) its antipyretic activity reduced by heating at 90 degrees Celsius for 10 minutes, and (2) a method for preparing the above proteins. The proteins are useful for, e.g. treatment and prevention of osteoporosis, rheumatism or multiple sclerosis, and also
                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                    prevention of osteoporosis, rheumatism or multiple sclerosis, and also as antigens for immunological diagnosis of these diseases and disorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Disclosure; Page 16-26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sclerosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Inhibition of osteoclast formation and/or antipyretic activity useful for, e.g. treating osteoporosis, rheumatism and multiple
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N-PSDB; V20767
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    356
                                 181
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                                                          SQEQTFQLLKLWKHQNRDQEMVKKIIQDIDLCESSVQRHLGHSNLTTEQLLALMESLPGK 120
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                                                                                                                                                                                                 SGNREATQKCGIDVTLCEEAFFRFAVPTKIIPNWLSVLVDSLPGTKVNAESVERIKRRHS
                              RKTMRFLHSFTMYRLYQKLFLEMIGNQVQSVKISCL 216
                                                                                                                     sqeqtfqllklwkhqnkdqdivkkiiqdidlcensvqrhighanltfeqlrslmeslpgk
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tism; multiple
                                                                                                                                                                                                                                                                                                                         391 AA;
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85.2%;
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sclerosis.
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                                                                                                                                                                                                                                               19;
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Pred. No. 7.2e-93;
                                                                                                                                                                                                                                               Mismatches
   391
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Query Match
Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              factor (OCIF) of the invention. The OCIF has a molecular weight by SDS-PAGE of 60 kD under reducing conditions and 120 kD under non-reducing conditions. The protein is adsorbed onto cation-exchargers or heparin and its activity is lowered after 10 mins at 70 deg r 30 mins at 56 deg.C, and is lost after 10 mins at 90 deg.C. Oci. 18 useful in the control of bone resorption and therefore in the treatment and prevention of disorders of bone resorption, e.g.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This sequence factor (OCIF)
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                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Disclosure; Page 64-66; 183pp; Japanese
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                            osteoporosis.
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20-FEB-1995;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Full length
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        22-APR-1997
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                                                                                                                                                                                                                                                    SGNREATQKCGIDVTLCEEAFFRFAVPTKIIPNWLSVLVDSLPGTKVNAESVERIKRRi;; ; ;;
SQEQTFQLLKLWKHQNRDQEMVKKIIQDIDLCESSVQRHLGHSNLTTEQLLALMESLIFI. 120
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DB; T36685.
                                                                                                    sqeqtfqllklwkhqnkdqdivkkiiqdidlcensvqrhighanltfeqlrslmesl...
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N, Shima N,
                                                                                                                                                                                                                                                                                                                                                                                                                              401
                                                                                                                                                                                                                                                                                                     Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 represents the full length osteoclastogenesis inhabitory of the invention. The OCIF has a main and a main a main and a ma
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95JP-0054977
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22..40
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1..21
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                                                                                                                                                                                                                                                                                                                         87.8%;
85.2%;
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Tsuda E, Ue
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                                                                                                                                                                                                                                                                                                       19;
                                                                                                                                                                                                                                                                                             Score 977; DB 17;
Pred. No. 7.5e-93;
9; Mismatches 13;
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Ueda M, Yano K,
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                                                                                                                                                                                                                          Length 401;
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Yasuda H;
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W53239
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                                                                                                                                                                                                                                                            specifically claimed in the present invention. The prevent specifically claimed in the present invention. The prevent specifically claimed in the present invention of osteoclasts describes: (1) a method of inhibiting the following characteristics: and/or antipyretic proteins, which have the following characteristics: (1) MW determined by SDS-PAGE of approximately 60 kDa under reducing conditions; (ii) 401 aa sequence (III) (see W53239); (iii) affinity to cation exchangers and heparin; (iv) its osteoclast formation inhibiting activity reduced by heating at 70 degrees Celsius for 10 minutes or 56 degrees Celsius for 30 minutes, and (v) its antipyretic activity reduced by heating at for 30 minutes, and (v) its antipyretic activity reduced by heating at
                                                                                                                                                                                                                  prevention of osteoporosis, as antigens for immunologica
                                                                                                                                                                                                                                              90 degrees Celsius for 10 minutes, and (2) a method for preparing above proteins. The proteins are useful for, e.g. treatment and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO9807840-A1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Morinaga T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    19-AUG-1997;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human OCIF genome
                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 4; Page 26-28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Inhibition of osteoclast formation and/or antipyretic activity useful for, e.g. treating osteoporosis, rheumatism and multiple
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (SNOW ) SNOW BRAND MILK PROD CO LTD.
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    246
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                                                                                                                                Local Similarity
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1998-169150/15
DB; V20768.
                                                                        SGNREATQKCGIDVTLCEEAFFRFAVPTKIIPNWLSVLVDSLPGTKVNAESVERIKRRHS
                                                         sgnsestqkcgidvtlceeaffrfavptkftpnwlsvlvdnlpgtkvnaesverikrqhs
                                                                                                                   184;
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tism; multiple
                                                                                                                                                                                         401 AA;
                                                                                                                                                                                                                   of osteoporosis, rheumatism or multiple sclerosis, and also for immunological diagnosis of these diseases and disorders
                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
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/label= OCIF_protein
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                                                                                                                               87.8%;
85.2%;
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sclerosis.
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                                                                                                                   19;
                                                                                                                Score 977; DB 19;
Pred. No. 7.5e-93;
9; Mismatches 13;
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RESULT
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                                                                                                                                        The present sequence represents and TRS (see Y05742-44) and TNFR TR1, also known as osteoprotegerin. The invention relation to TNFR related polypeptides TR1, TR3 and TR5 (see Y05742-44) and their ligand TL3 (see Y05745). TR1, TR3, TR5 and TL3 are used included methods of identifying agonists and antagonists, i.e. compounds that bind to the receptors or ligand, and which activation (agonist) or inhibit activation of (antagonists) TR1, TR3, TR5 or TL3. A screening kit for identifying agonists, antagonists or ligands, receptors, substrates, enzymes etc. for TR1, TR3, TR5 or TL3 polypeptides is provided. The agonists and antagonists are provided. The agonists and antagonists are provided.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Tumour necrosis factor receptor; TR1; osteoprotegerin; agonis antagonist; screening; human; cancer; AIDS; Alzheimer's disea inflammation; arthritis; septicaemia; autoinmune disease; psoriasis; inflammatory bowel disease; transplant rejection; graft versus host disease; infection; stroke; ischaemia; acute respiratory disease syndrome; restenosis; brain injury;
                                                                                                     useful for treatment of chronic and acute inflammation, arthriti septicaemia, autoimmune disease e.g. inflammatory bowel disease, psoriasis, transplant rejection, graft versus host disease,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Tumour necrosis factor receptor TR1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   19-JUL-1999
                                   infection, stroke, ischaemia, acute respiratory disease syndromes restenosis, brain injury, AIDS, bone diseases, cancer (e.g. restenosis, brain injury AIDS, bone diseases, cancer (e.g. lymphoproliferative disorders), atherosclerosis and Alzheimer's disease, etc., caused by imbalance of TR1, TR3, TR5 or TL3.
                                                                                                                                                                                                                                                                                                                                                                              Disclosure; Page 10-12; 23pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                     Identifying agonists and antagonists of tumor necrosis factor related receptors TR1, TR3 and TR5, and of ligand TL3, useful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 1999-246560/21.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                McDonnell PC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (SMIK ) SMITHKLINE BEECHAM CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        08-OCT-1997;
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                                                                                                                                                                                                                                                                                                                                                                                                                   treatment of
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                                                                                                                                                                                                                                                                                                                     sequence represents tumour necrosis factor receptor. It also known as osteoprotegerin. The invention relative
                                                                                                                                                                                                                                                                                                                                                                                                                   cancer, AIDS, Alzheimer's disease, bone disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
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                                 caused by
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Query Match Best Local Similarity

87.8%; 85.2%;

Score 977; DB 20; Pred. No. 7.5e-93;

Length 401;

Sequence

401

AA;

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RESULT
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13-AUG-1997;
26-AUG-1997;
        The invention relates to identifying agonists or antagonists to tumour necrosis factor receptor (TNF-R) related polypeptides (TR1 and TR2, TL2 and TL4). The method comprises: (a) (i) contacting TR1 or TR2 with a candidate compound in the presence of TL2 or TL4; or (ii) contacting TL2 or TL4 with a candidate compound in the presence of TR1 or TR2; and (b) assessing the ability of the candidate compound to compete with TR1 or TR2 binding to TL2 or TL4. TR and TL agonists and antagonists are useful for treating diseases caused by imbalance of TL or TR polypeptide levels, which cause: chronic and acute inflammation, arthritis, septicemia, autoimmune diseases, ischemia, acute respiratory disease, ischemia, acute respiratory disease, ischemia, acute respiratory disease, restenosis, brain injury, AIDS, bone diseases, cancer, athersclerosis and Alzheimer's disease. The present sequence represents a TNF-R related
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tumour necrosis factor receptor; TNF-R; TR1; TR2; TL2; TL4; arthritis; inflammation; septicemia; autoimmune disease; transplant rejection; graft vs. host disease; infection; stroke; ischemia; brain injury; AIDS; acute respiratory disease syndrome: restanceic brain injury; AIDS;
                                                                                                                                                                                                                                                                  Identifying agonists and antagonists to tumour necrosis factor receptor (TNF-R) related polypeptides (TR1, TR2, TL2 and TL4) useful for treating stroke, Alzheimer's disease and AIDS
                                                                                                                                                                                                                                       Disclosure; Page 11-12;
                                                                                                                                                                                                                                                                                                                                    WPI; 1999-134308/12
                                                                                                                                                                                                                                                                                                                                                                  Brigham-burke
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tumour necrosis
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polypeptide
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SQEQTFQLLKLWKHQNRDQEMVKKIIQDIDLCESSVQRHLGHSNLTTEQLLALMESLPGK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KISPEEIERTRKTCKSSEQLLKLLSLWRIKNGDQDTLKGLMYALKHLKTSHFPKTVTHSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sqeqtfqllklwkhqnkdqdivkkiiqdidlcensvqrhighanltfeqlrslmeslpgk\\
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sgnsestqkcgidvtlceeaffrfavptkftpnwlsvlvdnlpgtkvnaesverikrqhs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SGNREATQKCGIDVTLCEEAFFRFAVPTKIIPNWLSVLVDSLPGTKVNAESVERIKRRHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           respiratory disease syndrome;, restenosis, sclerosis; Alzheimer's disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             184;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                  MR,
                                                                                                                                                                                                                                                                                                                                                                                                                              97US-0057550.
97US-0055513.
97US-0056980.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               98EP-0304424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     factor receptor (TNF-R) related polypeptide TR1
                                                                                                                                                                                                                                                                                                                                                               Young PR
                                                                                                                                                                                                                                     18pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         120
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RESULT
W83926
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Best Local S
Matches 184
                                                       Claim 8;
                                                                       cellular
                                                                                                       WPI; 1999-024021/02
N-PSDB; V69277.
                                                                                                                                                                                        17-APR-1998;
                                                                                                                                                                                                                                                Protein
                                                                                                                                                                                                                                                                                                                                         01-MAR-1999
                                                                                                                                                                                                                                                                                                                                                         W83926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                       New isolated
                                                                                                                                Holtzman
                                                                                                                                                               10-OCT-1997;
18-APR-1997;
                                                                                                                                                                                                        29-OCT-1998
                                                                                                                                                                                                                        W09848051-A2
                                                                                                                                                                                                                                                                         Key
                                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                       FTHMA-070; human; neurological disorder; therapy; diagnosis.
                                                                                                                                                                                                                                                                                                                                                                         W83926
                                                                                                                                               (MILL-)
                                                                                                                                                                                                                                                                 Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                 366
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                                                                                                                                                                                                                                                                                                                                                                                                               KISPEEIERTRKTCKSSEQLLKLLSLWRIKNGDQDTLKGLMYALKHLKTSHFPKTVTHS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sgnsestqkcgidvtlceeaffrfavptkftpnwlsv1vdnlpgtkvnaesver1krqh.
                                                                                                                                                                                                                                                                                                                                                                                                                                               {\tt sqeqtfqllklwkhqnkdqdivkkiiqdidlcensvqrhighanltfeqlrslmesl} pqk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SQEQTEQLLKLWKHQNRDQEMVKKIIQDIDLCESSVQRHLGHSNLTTEQLLALMESLPGK 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SGNREATQKCGIDVTLCEEAFFRFAVPTKIIPNWLSVLVDSLPGTKVNAESVERIKRKI ...
                                                                                                                                                                                                                                                                                                                        FTHMA-070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  184;
                                                                                                                                                                                                                                                                                                                                                                         standard;
                                                                                                                                               MILLENNIUM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                       Fig
                                                                                                                                D,
                                                                      processes, e.g. neuronal development.
                                                                              ited human FTHMA-070 and T85 proteins - used for the diagnosis and therapy of disorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                      1; 127pp;
                                                                                                                               McCarthy
                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                               97US-0062017
97US-0044746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AA;
                                                                                                                                                                                       98WO-US07714
                                                                                                                                                                                                                                                /label=
22..401
                                                                                                                                                                                                                                                                                                                        protein
                                                                                                                                                                                                                                                                Location/Qualifiers 1..21
                                                                                                                                                                                                                                                                                                                                                                         Protein;
                                                                                                                                               BIOTHERAPEUTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        87.8%;
85.2%;
                                                                                                                                SA;
                                                      English
                                                                                                                                                                                                                                        Mat_protein
                                                                                                                                                                                                                                                       Sig_peptide
                                                                                                                                                                                                                                                                                                                                                                         401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 977; DB 20; Pred. No. 7.5e-93;
                                                                                                                                                                                                                                                                                                                                                                         B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                              used to develop
ders involving
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 401;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 245
                                                                                                                                                                                                                                                                                                                                                                                                                                                 365
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This is the amino acid sequence of human FTHMA-070, a novel protein having homology to tumour necrosis factor receptor. The sequence was deduced from that of a cDNA clone (see Y69277) isolated from cardiac coronary artery smooth muscle cell library. FTHMA-070 nucleic acids and polypeptides of the invention are useful as modulating agents in regulating a variety of cellular processes.

novel protein

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    They can be used for identifying compounds which bind to or modu the activity of the polypeptides (claimed). They can also be use in screening assays, detection assays (e.g. chromosomal mapping, tissue typing, forensic biology), predictive medicine (e.g. diagnostic assays, prognostic assays, monitoring clinical trials and pharmacogenomics), and methods of treatment (e.g. therapeuti and prophylactic) e.g. for neurological disorders.
   DNA encoding osteoclastogenesis inhibitory factor protein -
                                                                      Goto M,
                                                                                                                                                                                                                            Misc-difference
                                                                                                                                                                                                                                                                                                     Synthetic.
                                    WPI; 1996-402320/40
                                                                                                                21-JUL-1995;
20-FEB-1995;
                                                                                                                                                                                           W09626217-AJ
                                                                                                                                                                                                                                                Protein
                                                                                                                                                                                                                                                                                                                           osteoporosis
                                                                                                                                                                                                                                                                                                                                                           Mutated OCIF,
                                                           Nakagawa
                                                                                                                                                20-FEB-1996;
                                                                                                                                                                     29-AUG-1996
                                                                                                                                                                                                                                                                      Peptide
                                                                                                                                                                                                                                                                                                                                      Osteoclastogenesis
                                                                                                                                                                                                                                                                                                                                                                                 23-APR-1997
                                                                                                                                                                                                                                                                                                                                                                                                                           R99937 standard;
                                                                                          (SNOW ) SNOW BRAND MILK PROD CO LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181 RKTMRFLHSFTMYRLYQKLFLEMIGNQVQSVKISCL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SQEQTFQLLKLWKHQNRDQEMVKKIIQDIDLCESSVQRHLGHSNLTTEQLLALMESLPGK 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                kktirflhsftmyklyqklflemignqvqsvkiscl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KISPEEIERTRKTCKSSEQLLKLLSLWRIKNGDQDTLKGLMYALKHLKTSHFPKTVTHSL 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sqeqtfqllklwkhqnkdqdivkkiiqdidlcensvqrhighanltfeqlrslmeslpgk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sgnsestqkcgidvtlceeaffrfavptkftpnwlsvlvdnlpgtkvnaesverikrqhs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SGNREATQKCGIDVTLCEEAFFRFAVPTKIIPNWLSVLVDSLPGTKVNAESVERIKRRHS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            184;
                                                          Higashio K,
N, Shima N,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  401 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                           OCIF-DCR2
                                                                                                                95JP-0207508
95JP-0054977
                                                                                                                                                96WO-JP00374
                                                                                                                                                                                                                            63..64
                                                                                                                                                                                                                                              /note= "Signal peptide" 22..359
                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                 /note=
                                                                                                                                                                                                                                     /note=
                                                                                                                                                                                                                                                                                                                                                                                                                           Protein;
                                                                                                                                                                                                                                                                                                                                    inhibitory factor; OCIF; heparin; bone resorption;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     87.8%;
85.2%;
                                                          Kobayashi
Tsuda E,
                                                                                                                                                                                                                "Position of deletion,
                                                                                                                                                                                                                                     "Mature OCIF-DCR2"
                                                                                                                                                                                                                                                                                                                                                                                                                            359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 977; DB 20; Pred. No. 7.5e-93;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                          Mochizuki
da M, Yano
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     216
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                                                          × 'n
                                                                                                                                                                                                                delta 43-84'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 401
                                                          Morinaga
Yasuda H;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      or modulate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           trials,
   useful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           365
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This sequence represents a mutated version of the full length osteoclastogenesis inhibitory factor (OCIF) of the invention. This sequence represents OCIF-DCR2 in which amino acids 43-84 of the mature OCIF protein are deleted. The OCIF of the invention has a molecular weight by SDS-PAGE of 60 kD under reducing conditions and 120 kD under non-reducing conditions. The protein is adsorbed into cation-exchangers or heparin and its activity is lowered after the mature of the control of bone resorption and the extense at 70 deg.C or 30 mins at 56 deg.C, and is lost after 10 mins at 10 deg.C. OCIF is useful in the control of bone resorption and the extense in the treatment and prevention of disorders of bone resorption.
                                                                                                                                                                                                                                                anti-viral response; growth regulator; immune response; meningococcemia; autoimmune disease; apoptosis; inflammation; cachexia; cerebral malaria;
                                      Fleischmann RD,
                                                                                                                                                                                                                                                                            inhibitor; tumour growth; tumour necrosis; microorganism infection; cellular differentiation stimulation; ionising radiation; septic sh
                                                                                                                                                                                                                                                                                                         TR1
                                                                                                                                                                                                                                                                                                                                   TR1 receptor protein
                                                                                             18-SEP-1996;
                                                                                                                       18-SEP-1996;
                                                                                                                                                   26-MAR-1998.
                                                                                                                                                                             WO9812344-A1
                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                      AIDS;
                                                                                                                                                                                                                                                                                                                                                              27-AUG-1998
                                                                                                                                                                                                                                                                                                                                                                                                                     W57635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         for bone resorption control, esp. treatment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
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                                                                                                                                                                                                                                                                                                                                                                                                                                               14
                                                                                                                                                                                                                                                                                                       receptor; tumour necrosis factor receptor-1; TNF-alpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RKTMRFLHSFTMYRLYQKLFLEMIGNQVQSVKISCL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KISPEEIERTRKTCKSSEQLLKLLSLWRIKNGDQDTLKGLMYALKHLKTSHFPKTVTH: : 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SQEQTFQLLKLWKHQNRDQEMVKKIIQDIDLCESSVQRHLGHSNLTTEQLLALMESLPGK 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      kktirflhsftmyklyhklflemignqvqsvkiscl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             kvgaediektikackpsdqilkllslwrikngdqdtlkglmhalkhsktyhfpktvtqs!
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sqeqtfqllklwkhqnkdqdivkkiiqdidlcensvqrhighanltfeqlrslmeslpqk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              183;
                                                                                                                                                                                                                                  therapy
                                                                                                                                                                                                                                                                                                                                                                                                                   standard;
                                                                   HUMAN GENOME SCI INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                             96WO-US15003
                                                                                                                       96WO-US15003
                                      Greene
                                                                                                                                                                                                                                                                                                                                                                                                                  Protein; 401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           87.3%;
84.7%;
                                        JM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            183pp; Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              19;
                                      N,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 972; DB 17;
Pred. No. 2.1e-92;
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                                      ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                          ionising radiation; septic shock;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of osteoporosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          359;
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                                                                                                                                                                                                                                                                                                      TNF-f ta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5.7.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   263
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N-PSDB; V24486

WPI; 1998-217278/19

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RESULT 15
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              such as HTV. Antagonists to the TRI receptor may be used to treat autoimmune diseases, e.g. graft versus host rejection and allograft rejection, and Toell mediated autoimmune diseases. They may also be used to prevent apoptosis. They may also be used to prevent cytotoxicity and to treat septic shock, meningococcemia, inflammation, bacterial infections, cachexia, cerebral malaria or AIDS. The products can also be used for diagnosing the above diseases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        receptor agonists can be used for inhibition of tumour growth and necrosis of tumours. They can also be used to stimulate cellular differentiation, e.g. T cell, fibroblasts or haematopoietic cell differentiation, may be used to augment TRI's role in the host's deagainst microorganisms and prevent related disease. The agonists may also be used to protect against the deleterious effects of ionising
                      antisense oligonucleotide; probe; detection; screening; human; bone disease; osteoporosis; Paget's disease; hypercalcaemia; hyperparathyroidism; rheumatoid arthritis; osteomyelitis; osteolytic metastasis; periodontal bone loss; bone necrosis;
                                                                                                                                                                                                                                                                                                                                                                                 W38345 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      radiation produced during a course of radiotherapy, e.g. denaturation o enzymes, lipid peroxidation or DNA damage. The agonists may further be used to mediate an anti-viral response, to regulate growth, to mediate the immune response and to treat immunodeficiencies related to diseases
osteopaenia.
                                                                                                                                 Osteoprotegerin; antibody; diagnosis; affinity purification; recombinant production; transgenic animal; treatment; preven
                                                                                                                                                                                                                   Human osteoprotegerin
                                                                                                                                                                                                                                                                              20-APR-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 13;
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                                                                                                                                                                                                                                                                         (first entry)
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84.7%;
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Pred. No. 2.5e-92;
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                                                                                                                                                                                                                                                                                                                               also contemplated. Fragments of the cDNA can be used as prodetect OPG expressing cells and tissue, and to screen cDNA libraries for related sequences. OPG can be used to treat of prevent bone diseases, specifically excessive bone loss, e osteoporosis, Paget's disease, hypercalcaemia,
                                                                                                                                                                                                                                                                                                                                                                                         recombinant OPG and to generate transgenic animals. It can also be used to regulate the level of OPG in mammals, specifically increase OPG levels, however the use of antisense sequences is
                                                                                                                                                                                                                                                                                                                                                                                                                               The present sequence is human osteoprotegerin (OPG). Anti-OI antibodies can be used in OPG diagnostic assays, and as affi purification materials. The OPG cDNA can be used to express
                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Nucleic acid encoding osteoprotegerin - useful for treatment of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 1997-334271/31
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22-DEC-1995;
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SQEQTFQLLKLWKHQNRDQEMVKKIIQDIDLCESSVQRHLGHSNLTTEQLLALMESLI*..
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                                                                                                   sqeqtfqllklwkhqnkaqdivkkiiqdidlcensvqrhighanltfeqlrslmeslpqk
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84.78;
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Pred. No. 5e-92;
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